STANDARD PLANS

CITY OF LODI

DEPARTMENT OF PUBLIC WORKS

STANDARD PLANS INDEX

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106	*Arterial*	*Retired 4/84*
107	*Industrial*	*Retired 4/84*
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109	*Frontage Road (Lower Sacramento Road)*	*Retired 2/00*
110	*Beckman Road*	*Retired 4/84*
111	Special Commercial Driveway	12/28/00
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114	Commercial-Type Gutter and Driveway	9/25/02
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121	Sidewalk and Driveway with Planting Strip	9/25/02
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STANDARD PLANS INDEX

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305	*Storm Drain Connection without Manhole*	*Retired 2/00*
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312	*Curb Inlet Catch Basin*	*Retired 10/99*
313	Construction Catch Basin Filter	12/28/00
314	Gutter Transition Detail	12/28/00
315	Sand/Oil Trap	12/28/00

STANDARD PLANS INDEX

SERIES		LATEST REVISION
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402	Water Valve Installation	12/28/00
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408	Water Valve Frame & Cover	12/28/00
409	Temporary Water Blow-off and Connection Details	9/25/02
410	Water & Wastewater Service Modification	12/28/00
411	Double Check Valve Assembly	12/28/00
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STANDARD PLANS INDEX

SERIES		LATEST REVISION	
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602	Standard Utility Locations in Easements/Private Streets	12/28/00	
603	Street Name Sign Location	12/28/00	
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605	Map Statements	9/25/02	
606	Rainfall Intensity	12/28/00	
607	*Joint Trenching Details*	*Moved to Std Plan*	*507*
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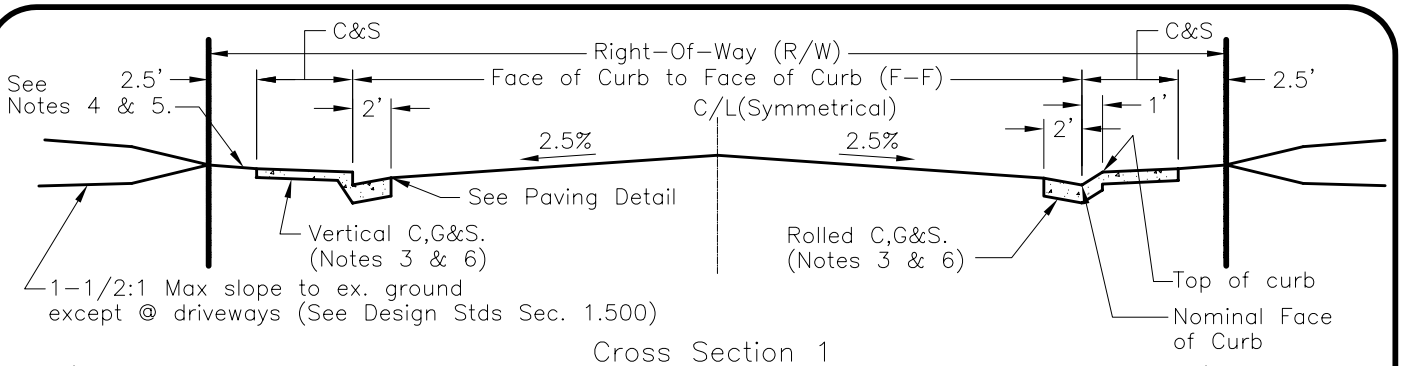
609	*Pipe Class Requirements*	*Retired 10/99*	
610	Sanitary Sewer Leakage Test	12/28/00	
611	R/W Corner Cut-off & Curb Return Requirements	12/28/00	
612	Curb Return Layout Plan	12/28/00	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

STREET SECTIONS



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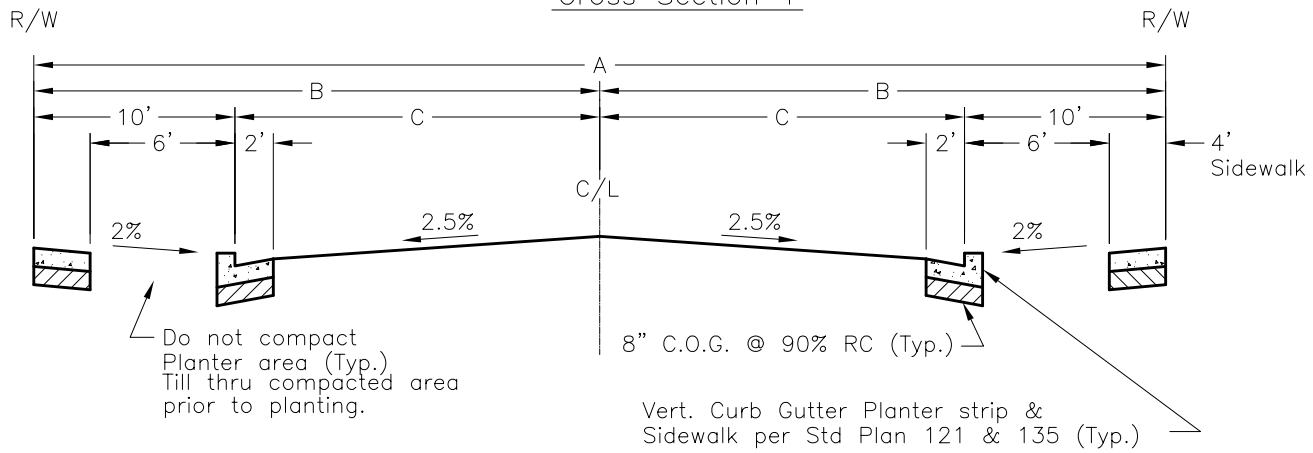

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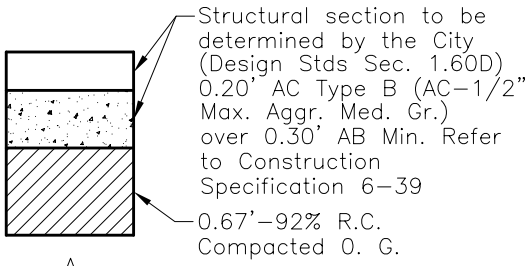
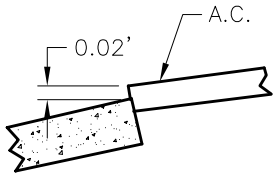


Structural Section



Paving Detail at TOE

Notes:

1. See City Public Improvement Design Stds. Sec. 1 for general design requirements.
2. Widening at intersections to provide additional lanes may be required.
3. See Std. Plans 135 and 136 for Vertical and Rolled C,G&S respectively.
4. The area between the R/W and back of sidewalk shall be graded to 0.02' per ft and properly compacted to prevent settlement. Where wider sidewalk is required (ie. commercial areas, around hydrants, poles etc) sidewalk specifications apply.
5. Private use of the R/W subject to Encroachment Permit requirements and Design Standards Sections 1.400 & 1.500.
6. See Design Stds. Section 1.500 for curb & gutter type criteria.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

STD PLAN 101

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Street Sections

Street Classification	(A) R/W	(2xC) F–F	Min. C&S	Cross Section	Structural Section
Minor Residential	50'	34'	5.5' Rolled	1	A
Minor Residential	50'	30'	5.5' Vertical	2	A
Standard Residential	55'	39'	5.5' Rolled	1	A
Standard Residential	55'	35'	5.5' Vertical	2	A
Minor Collector	60'	44'	5.5' Vertical	1	B
Major Collector	68'	52'	5.5' Vertical	1	B
Industrial (Local)	66'	52'	4.5' Vertical	1	B
Secondary Arterial Four–Lane Undivided	80'	64'	5.5' Vertical	1	B
Minor Arterial Four–Lane Divided	94'	76'	5.5' Vertical	1	B
Major Arterial Six–Lane Divided	118'	102'	5.5' Vertical	1	B

Section Dimension Table

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By: F. Wally Sandelin 12/28/00

F. Wally Sandelin
City Engineer
R.C.E. 39895

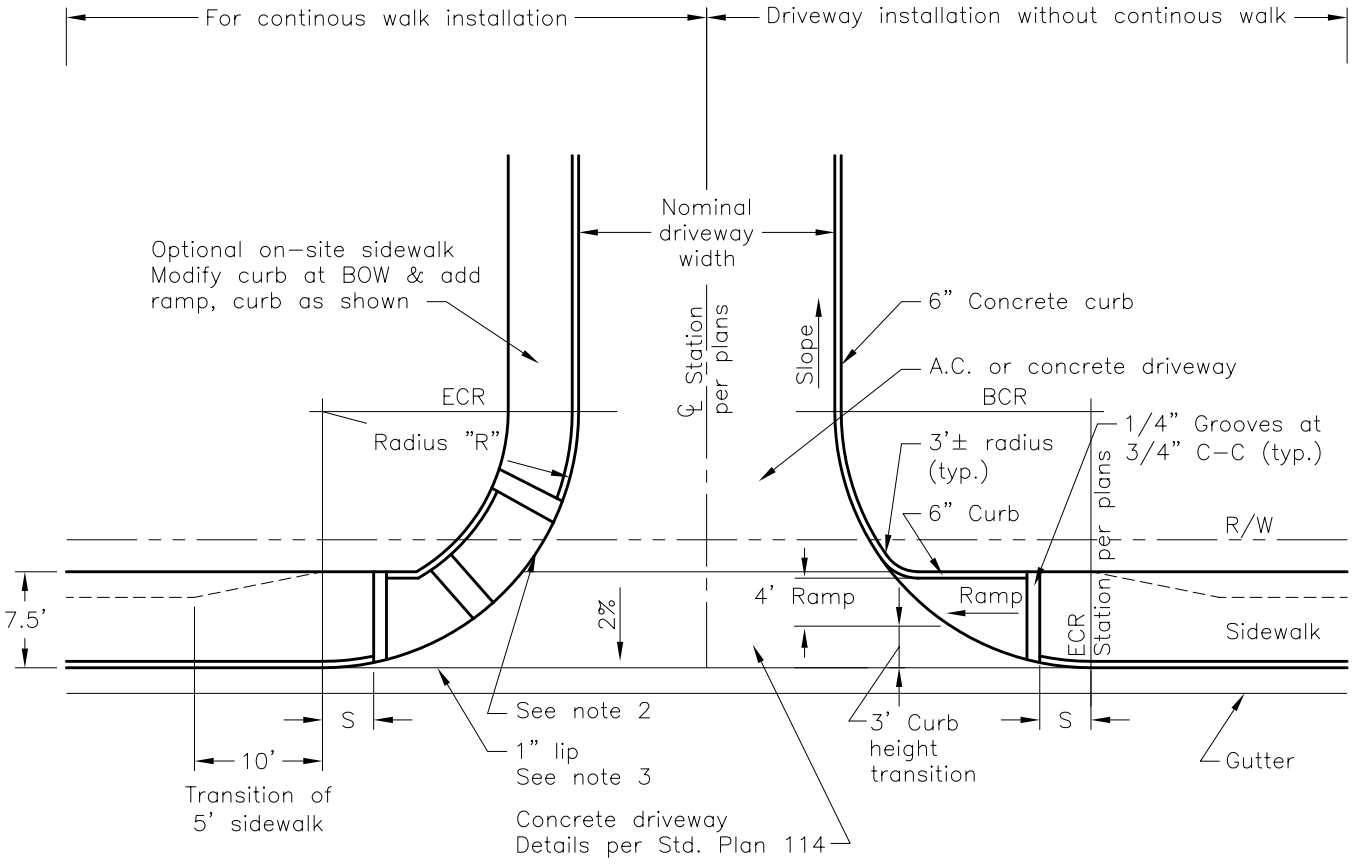
Date

STD PLAN 101

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Special Commercial Driveway



Plan

"R"	"S"
15'	3'
20'	4'
25'	5'
30'	6'
35'	7'

Notes:

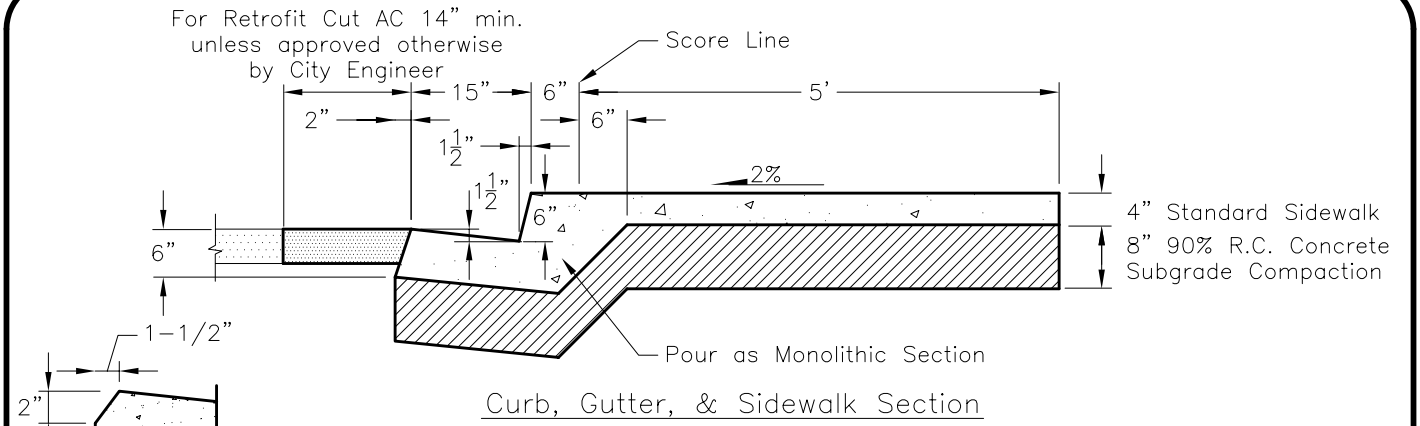
1. Special Commercial Driveway to be used only where required or specifically approved by the Public Works Director.
2. See Std. Plan 132 for wheelchair ramp details.
3. Provide in–line catch basin if depth of flow in gutter exceeds 3".

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	111
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

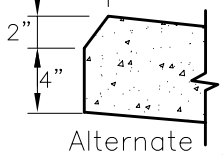
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Square–Type Curb, Gutter, Sidewalk and Residential Driveway



Curb, Gutter, & Sidewalk Section



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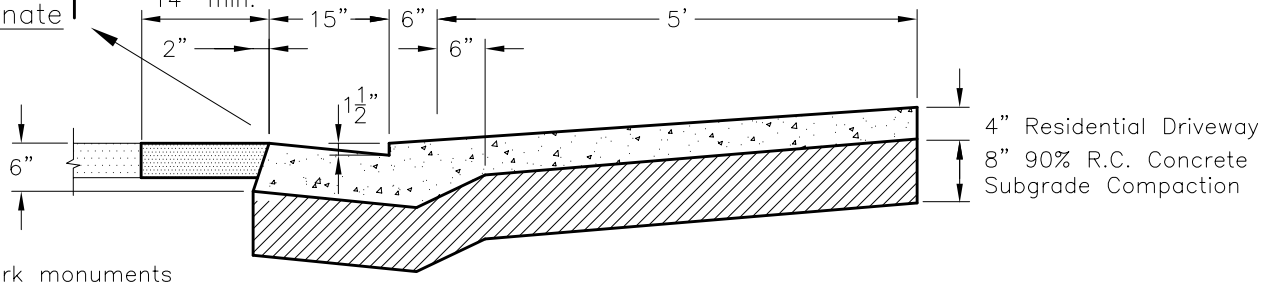
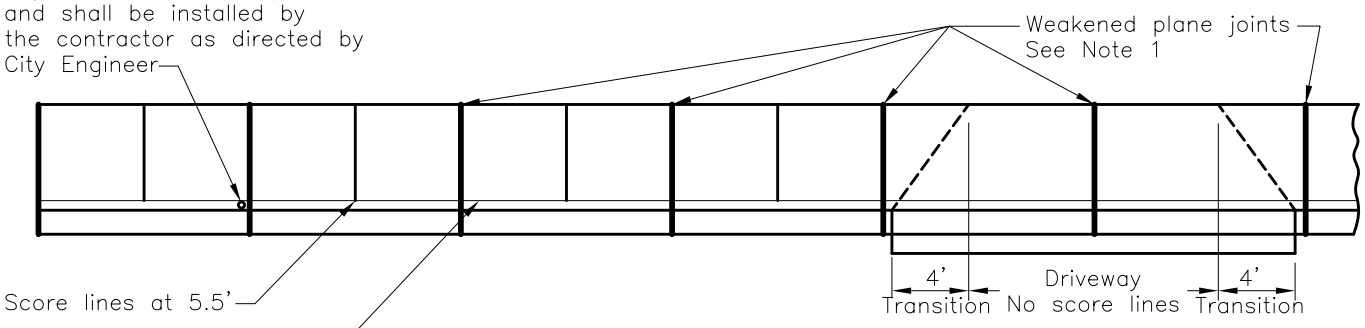
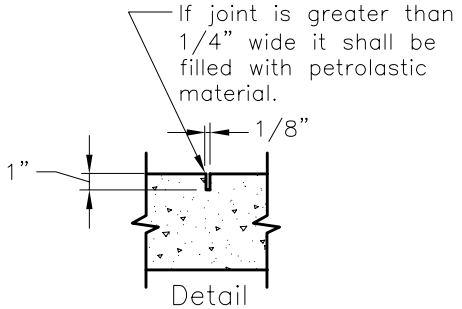


Residential Driveway Section

Bench Mark monuments will be furnished by the City of Lodi, when required, and shall be installed by the contractor as directed by City Engineer



Plan



Detail

Weakened Plane Joint

Notes:

1. Construct weakened plane joints at 11' interval to match score lines.
2. Use impervious membrane cure. Broom finish.
3. Class B concrete per Section 90 of Std. Spec., 1–1/2" max. aggregate.
4. Construct expansion joints at 200' max.
5. All exposed edges shall be rounded to 1/2" radius.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

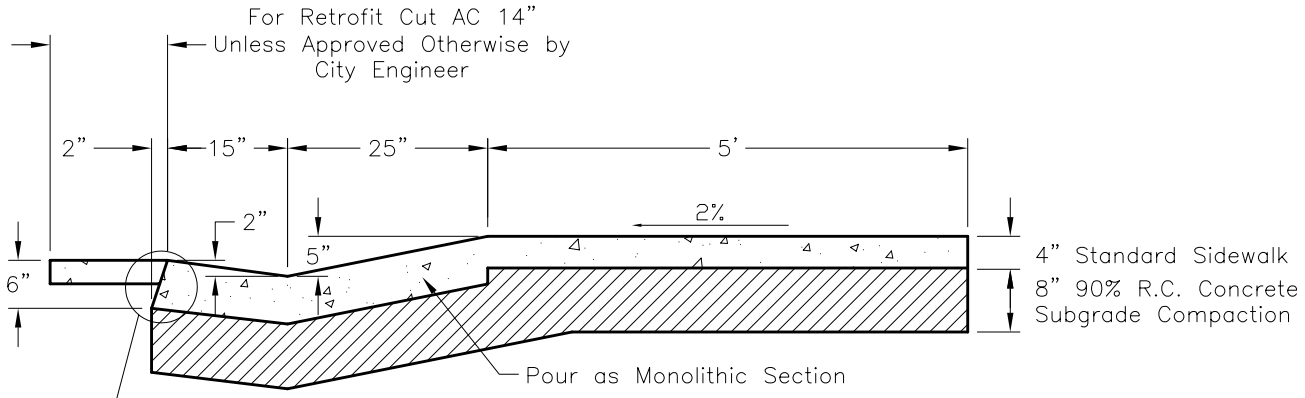
STD PLAN

112

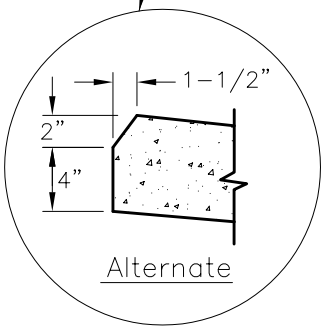
CITY OF LODI

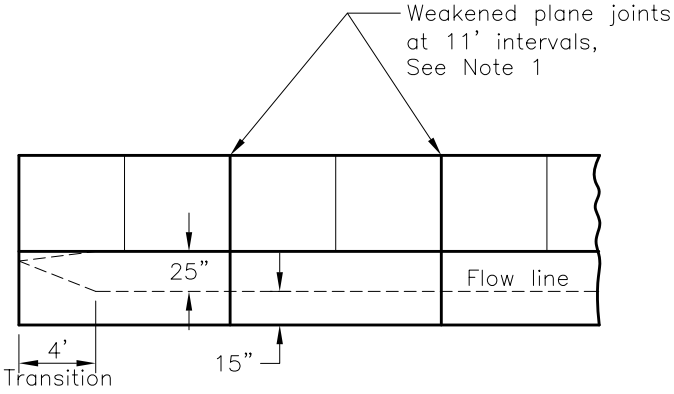
PUBLIC WORKS DEPARTMENT

Driveway—Type Curb, Gutter & Sidewalk

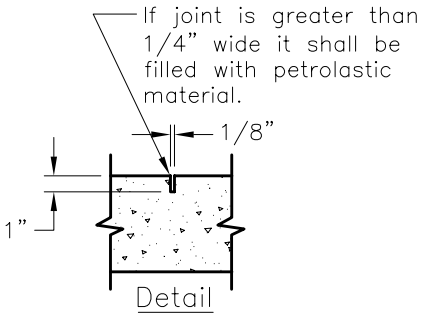


Curb, Gutter, & Sidewalk Section





Plan



Detail

Weakened Plane Joint

Notes:

1. Construct weakened plane joints at 11' interval to match score lines.
2. Use impervious membrane cure. Broom finish.
3. Class B concrete per Section 90 of Std. Spec., 1-1/2" max. aggregate.
4. Construct expansion joints at 200' max.
5. All exposed edges shall be rounded to 1/2" radius.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

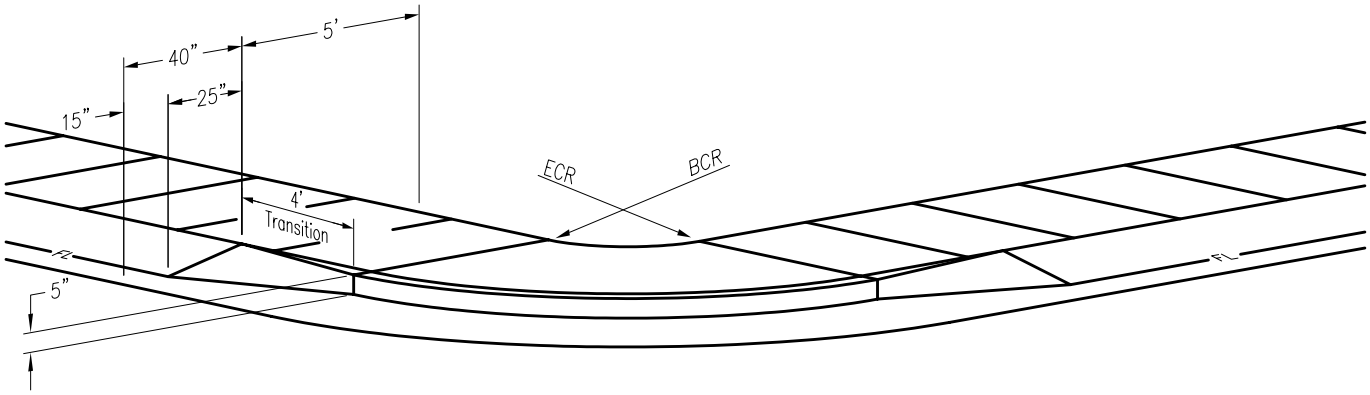
STD PLAN

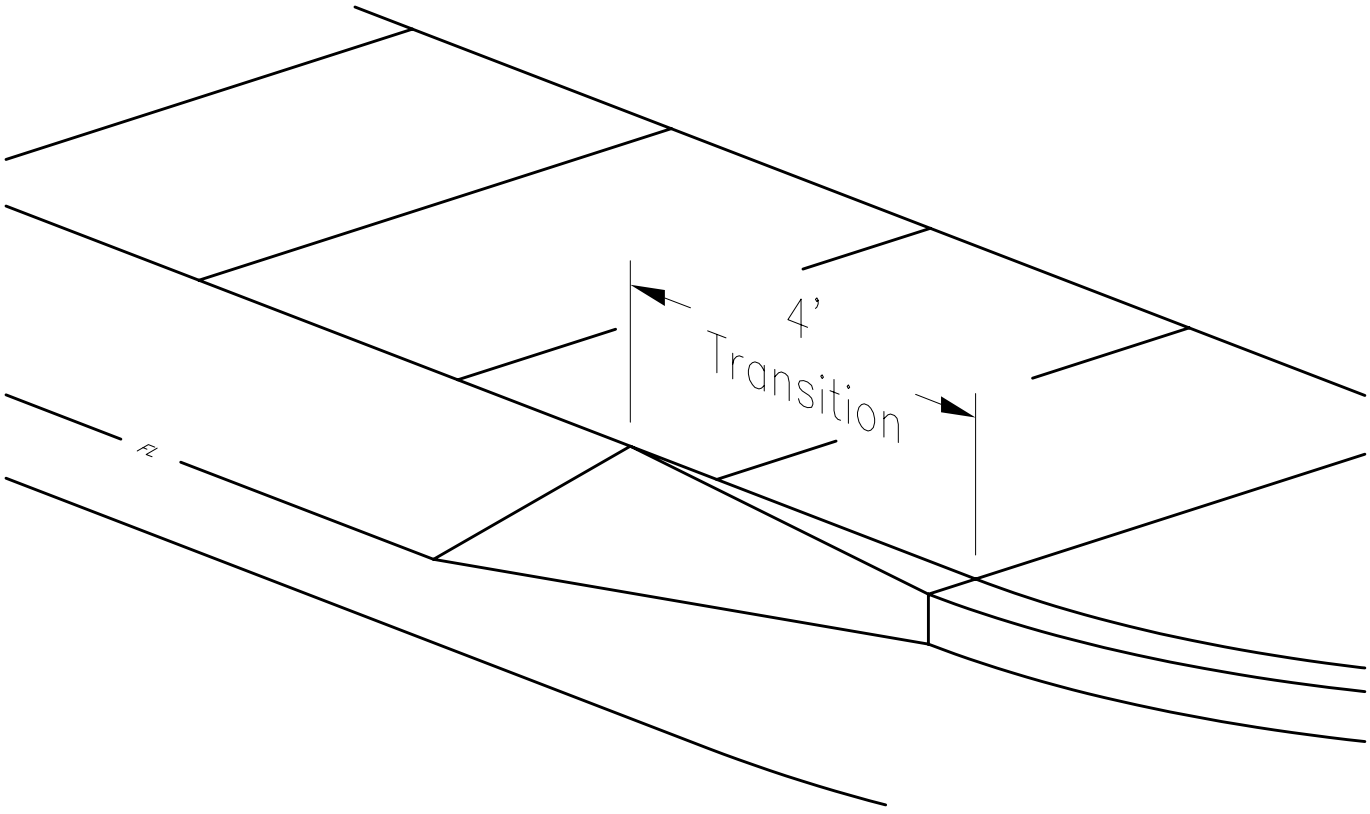
113A

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Curb Return Transition





Notes:

1. For Driveway–Type C,G & S See Std. Plan 113A.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

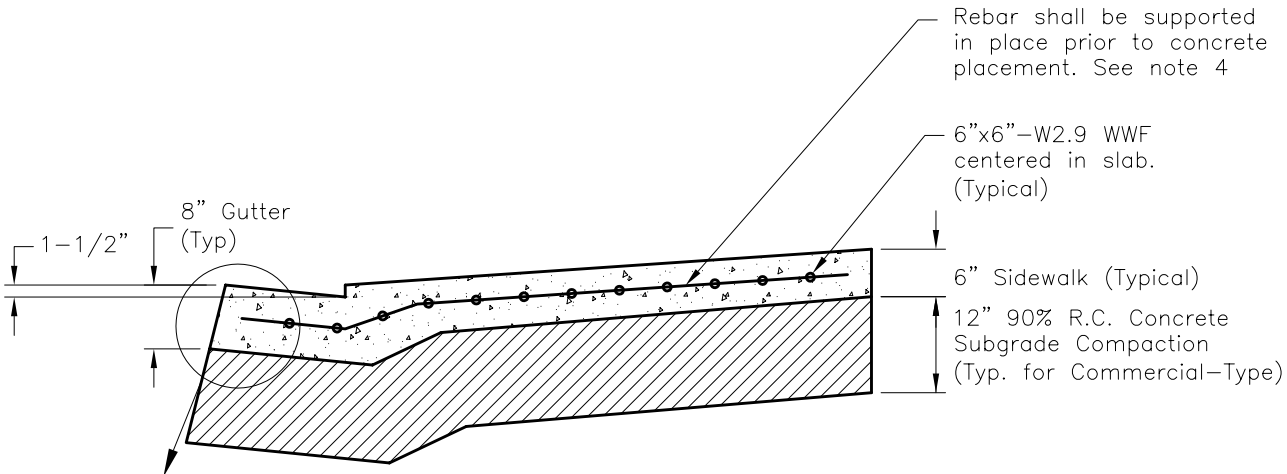
STD PLAN

113B

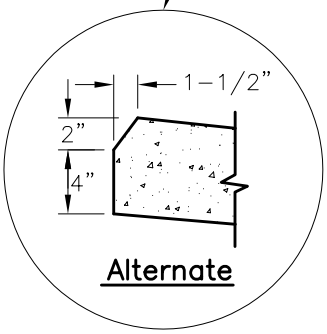
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Commercial–Type Gutter & Driveway



Section



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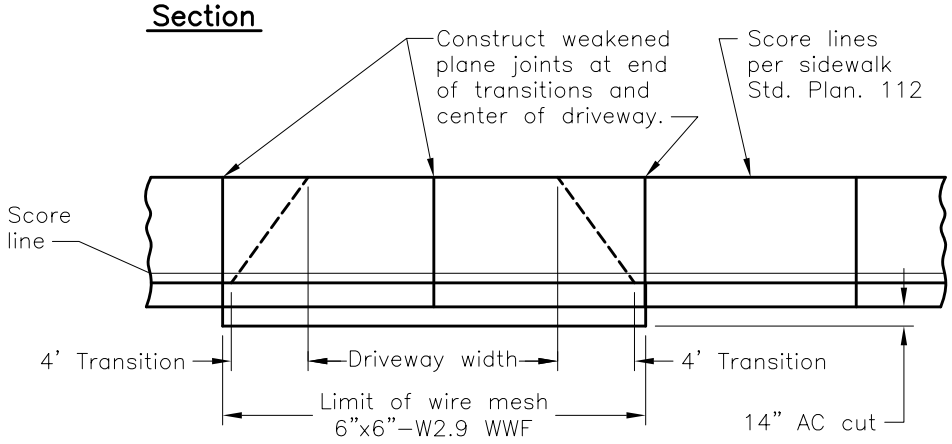
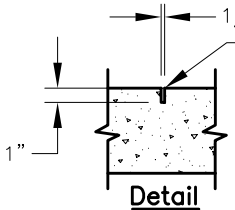


Plan



If joint is greater than 1/4" wide it shall be filled with petrolastic material.

Detail

Weakened Plane Joint

Notes:

1. Use impervious membrane cure. Broom finish.
2. Class B concrete per Section 90 of Std. Spec., 1–1/2" max. aggregate.
3. All exposed edges shall be rounded to 1/2" radius.
4. #4 rebars may be substituted for mesh when approved by the Engineer.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED FL HEIGHT DIMENSION	
Date 12/00				

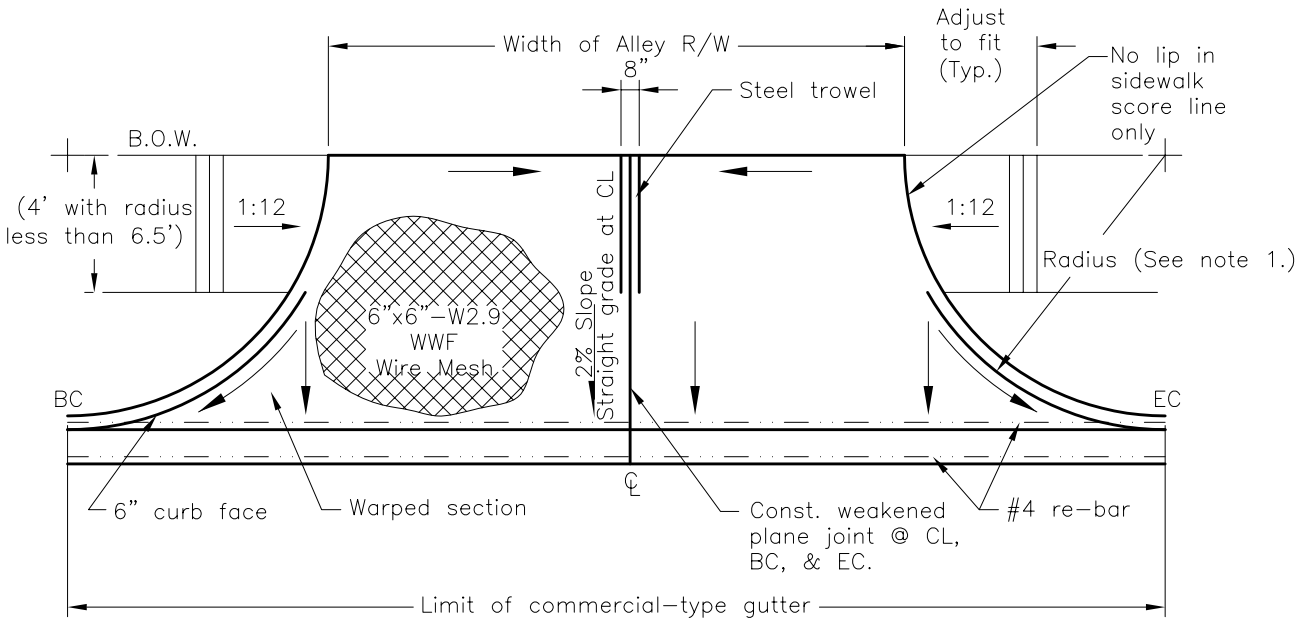
Approved By: F. Wally Sandelin, City Engineer, R.C.E. 39895 — 9/25/02 Date

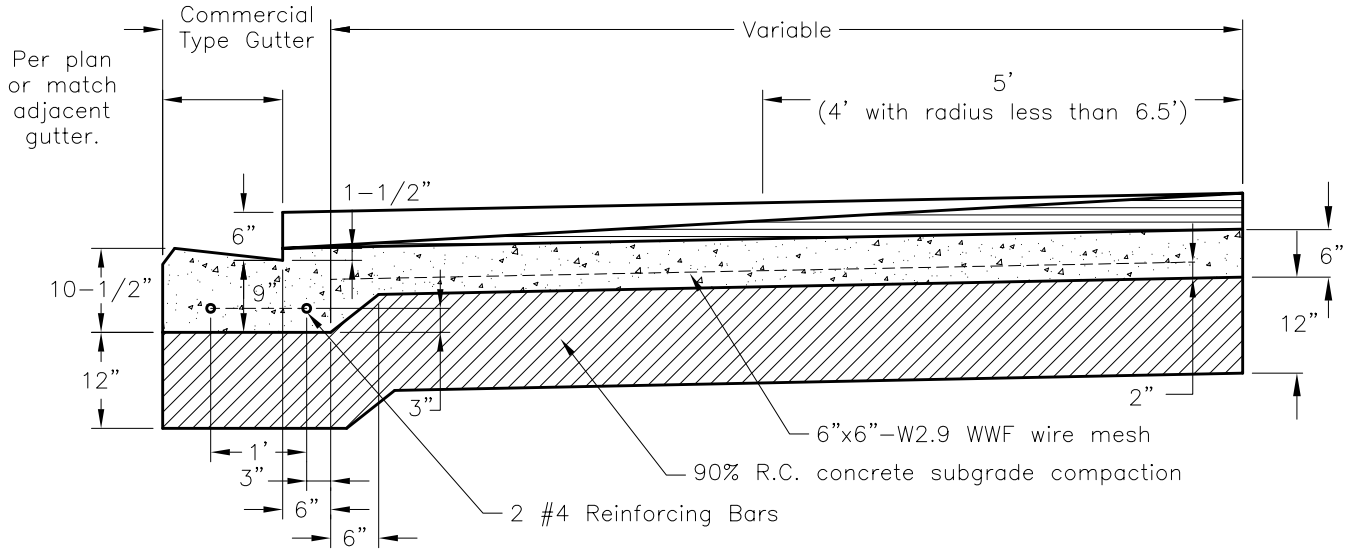
STD PLAN 114

CITY OF LODI

PUBLIC WORKS DEPARTMENT

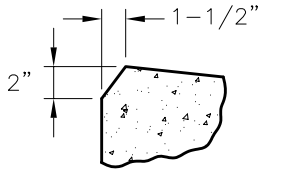
Concrete Alley Approach





Notes:

1. Radius equals distance from face of curb to back of sidewalk or from face of curb to property line if no sidewalk exists.
2. Use impervious membrane cure. Broom finish.
3. Class B concrete per Section 90 of Std. Spec., 1–1/2" max. aggregate.
4. #4 bars 12" O. C. may be substituted for mesh when approved by the Engineer.



Chamfer Detail

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

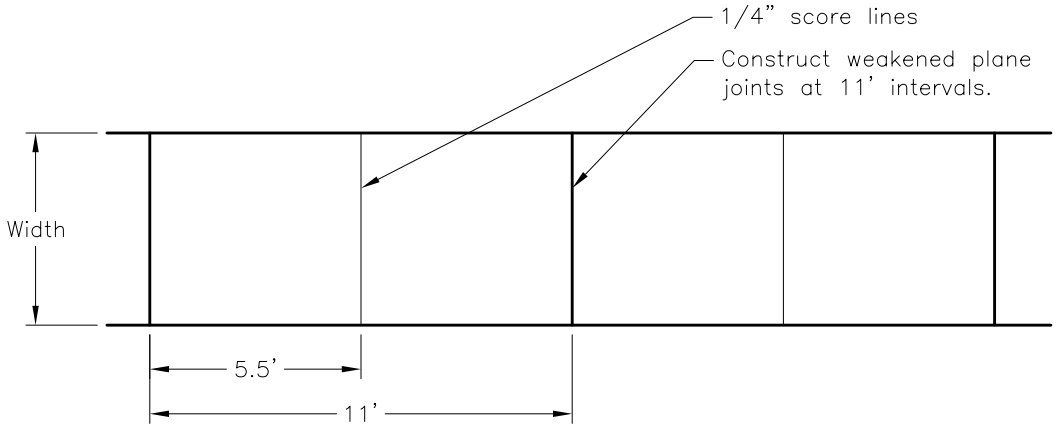
STD PLAN

115

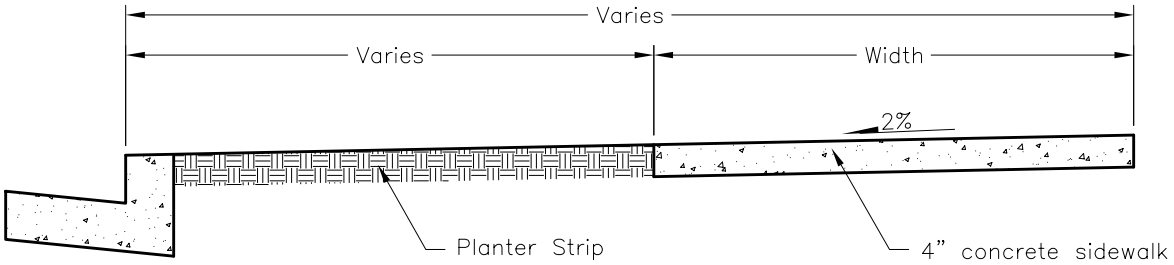
CITY OF LODI

PUBLIC WORKS DEPARTMENT

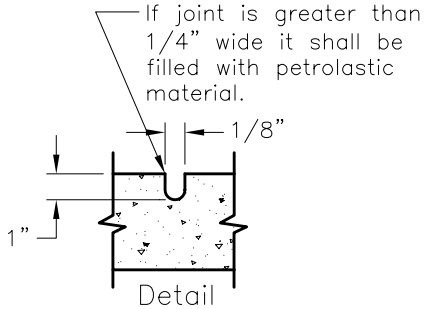
Sidewalk Repair



Plan



Sidewalk Detail



Detail

Weakened Plane Joint

Notes:

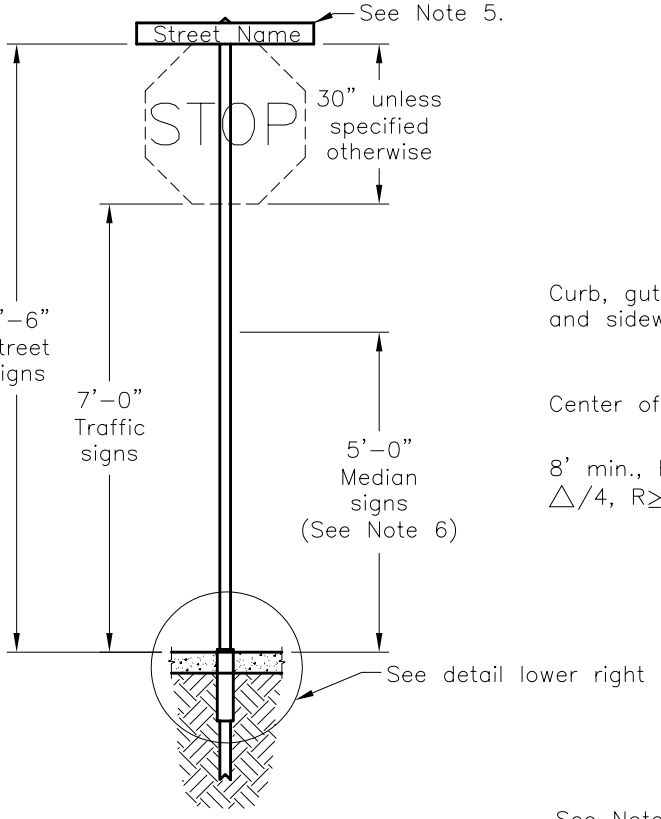
1. Match width with adjacent existing sidewalk. For replacement less than 11' match scoring pattern.
2. Concrete shall be 2500 psi @ 28 days. Max. 4" slump. For jobs less than one yard, no static trailer mix, mixer trailer may be used.
3. Construct sidewalk on firm stable subgrade.
4. Light broom finish.
5. Impervious membrane cure.

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	117
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

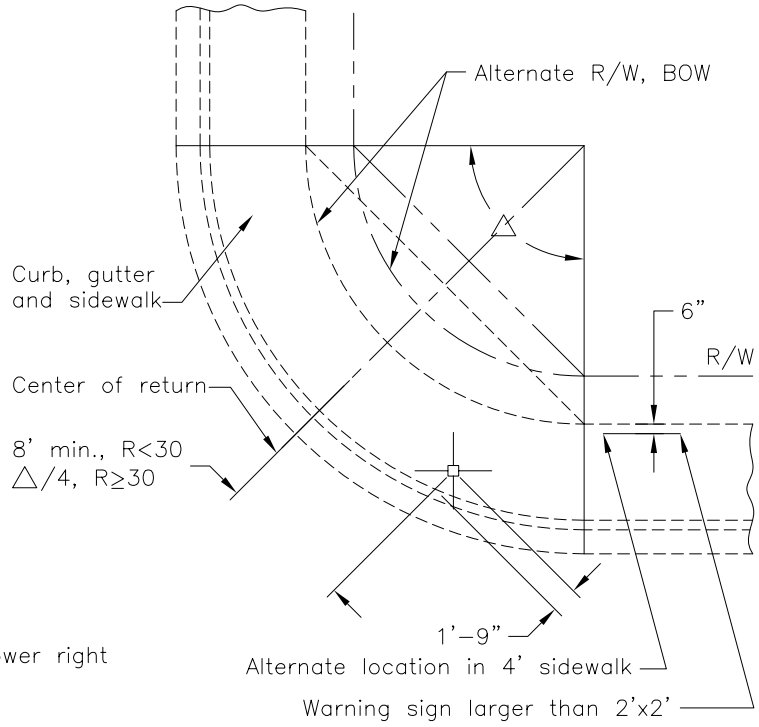
CITY OF LODI

PUBLIC WORKS DEPARTMENT

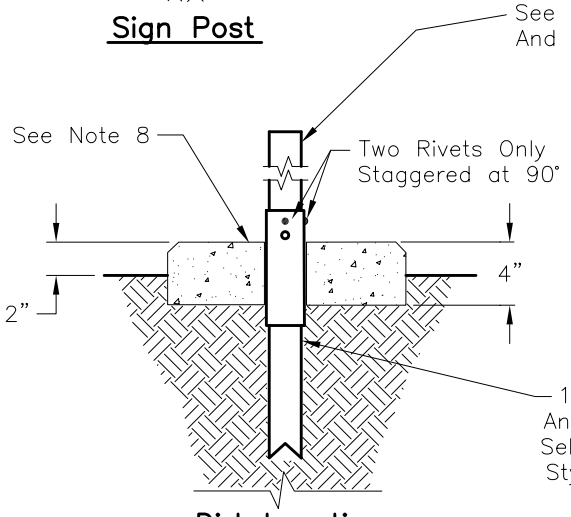
Sign Post Installation



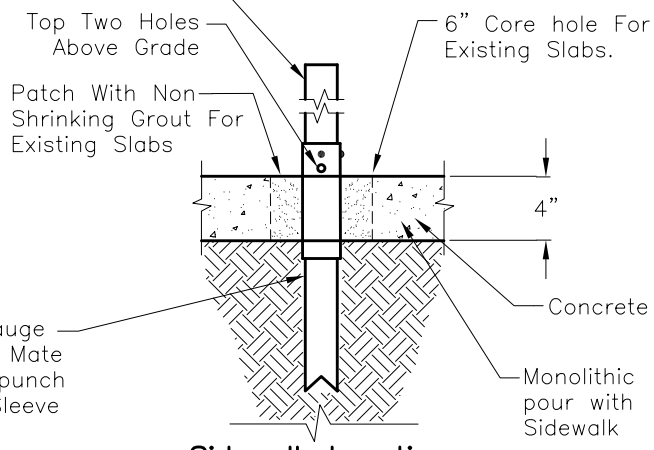
Sign Post



Sign Post Location



Dirt Location



Sidewalk Location

Notes:

1. Concrete For Post Installation May Be Class C Concrete.
2. Posts Shall Be New 2"x2" 14 Gauge Galv. Tube Set Plumb.
3. When Sign Square Footage Is 7.5 Square Feet or More Post Shall Be 2" x 2" 12 Gauge Galv. Tube.
4. Posts Shall Be Select Punch Both Ends – Four Sides.
5. Street Name And Traffic Signs Per Std Plan 142.
6. R10's To Be Located 3.5' High When placed in the median.
7. A Powder Coat (Downtown Green) Is Required For Downtown Locations.
8. Form And Edge 12" x 12" Concrete Apron 4" Thick In Dirt Locations, When Required By Engineer.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	Changed 2"ø Pipe to 2" Sq.	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

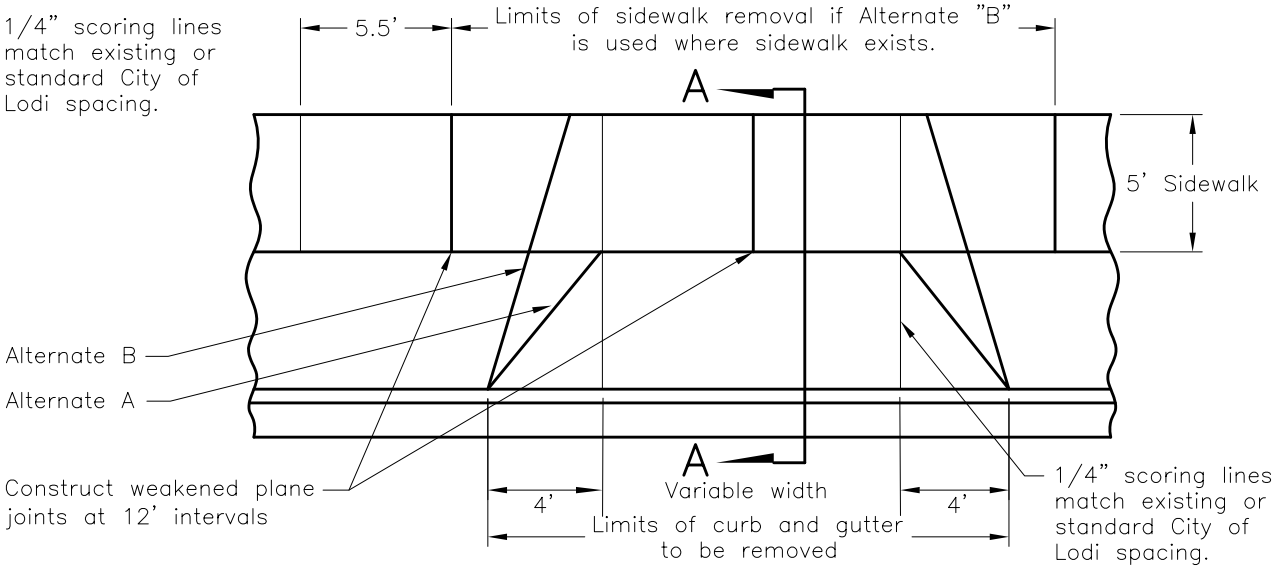
9/25/02
Date

STD PLAN 119

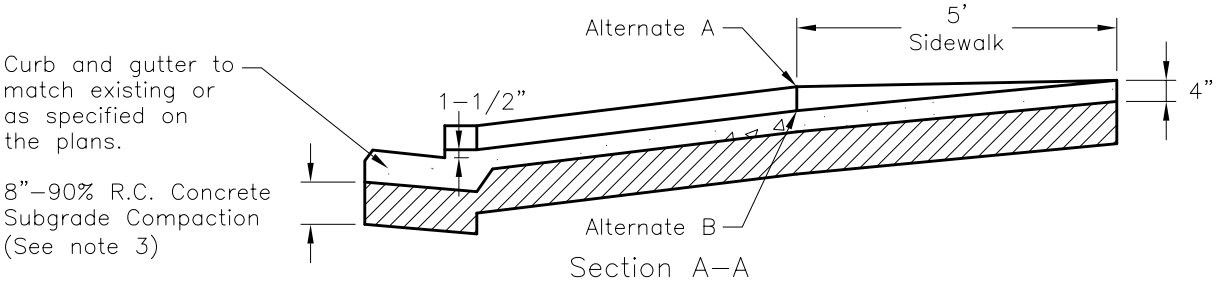
CITY OF LODI

PUBLIC WORKS DEPARTMENT

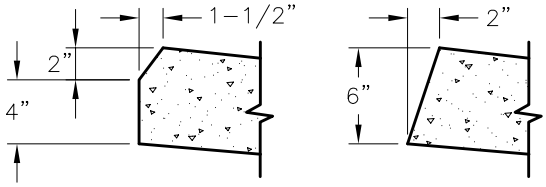
Sidewalk and Driveway with Planting Strip



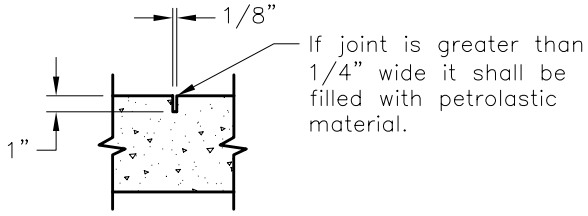
Driveway



Section A–A



Detail
Alternate Toe Configurations



Detail
Weakened Plane Joint

Notes:

1. Alternate "A" shall be used, except where the driveway slope approaches 3 inches per foot. It may then be necessary to use Alternate "B".
2. When Alternate "B" is used sidewalk shall be removed to nearest score–mark by sawing. When the sidewalk is replaced the existing scoring pattern shall be maintained.
3. Additional compaction is not required where existing curb and gutter, sidewalk, and/or driveway are being removed and replaced.
4. Class B concrete per Section 90 of Std. Specs, 1–1/2" max. aggregate with impervious membrane cure and light broom finish.

Dr. K	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED SCORE LINES	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

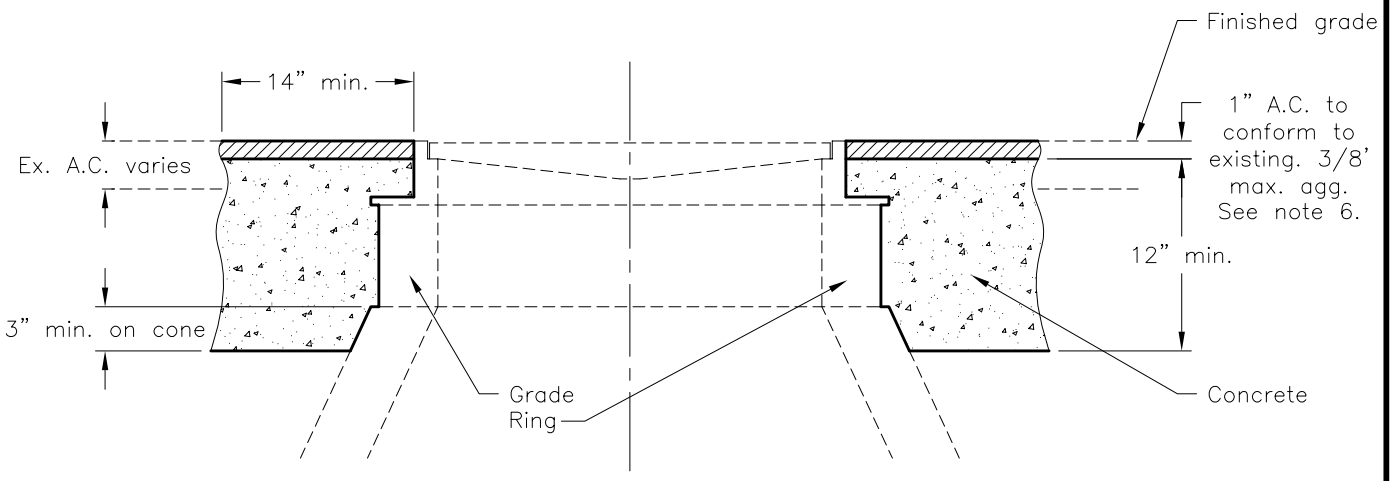
9/25/02
Date

STD PLAN
121

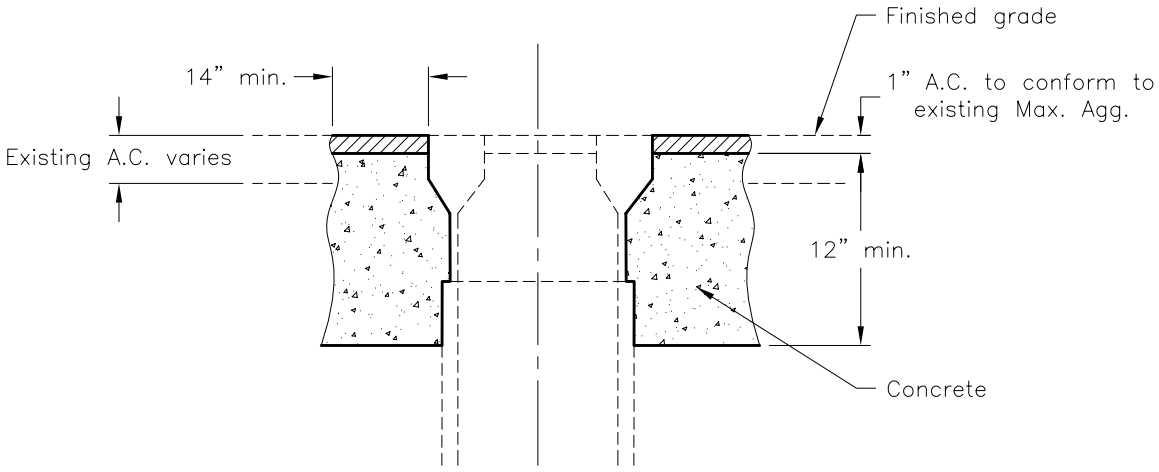
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Frame and Cover Adjustment



Manhole & Riser



Water Valve
(Monument Box similar)

Notes:

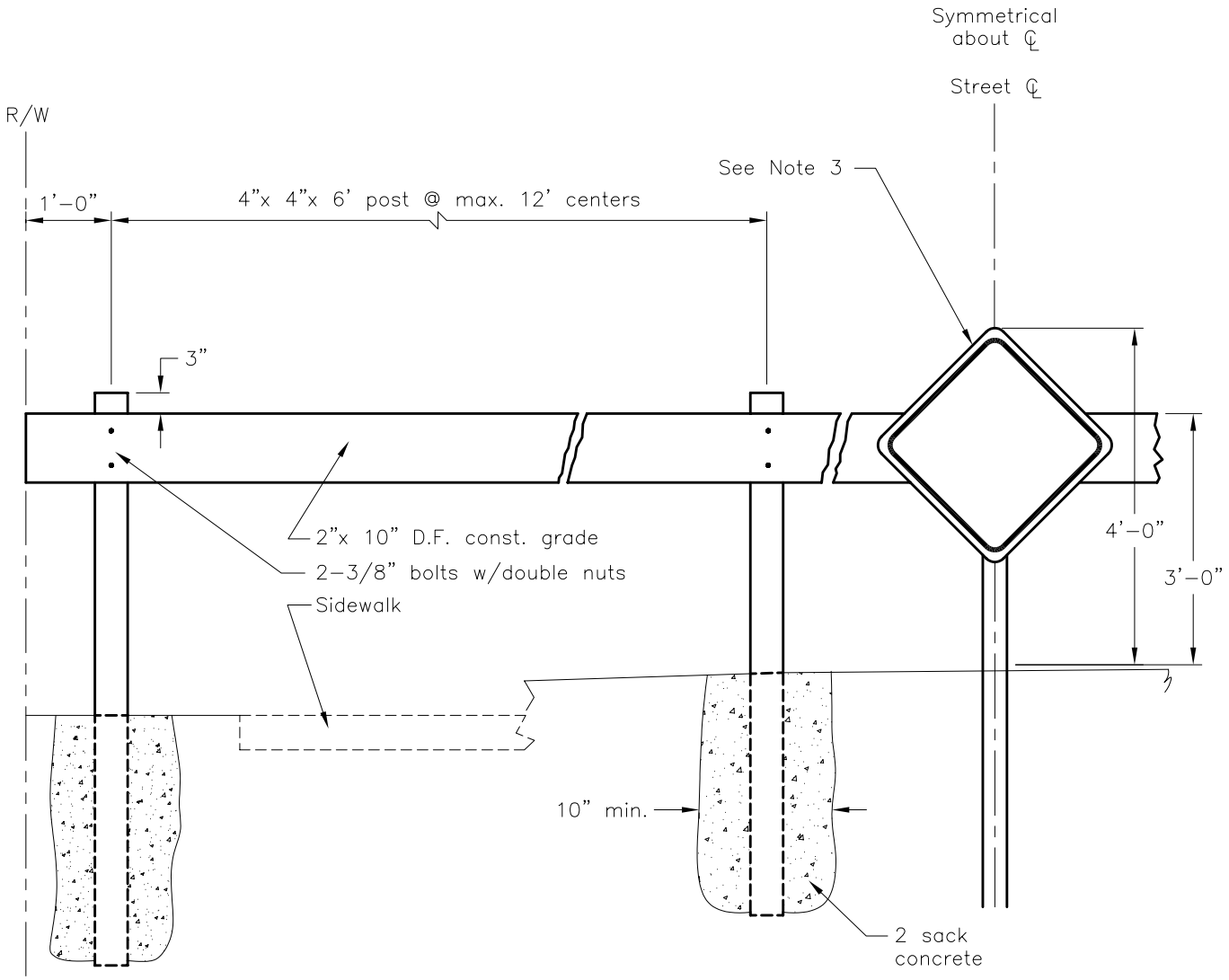
1. This detail shall be used where frame and covers are being adjusted to grade.
2. Class B Concrete shall be used. Finish shall be rough.
3. Concrete shall be placed against neatly edged excavation.
4. Frames shall match ex. finished grade within 1/8".
5. Tack the area to be paved, prior to placement of AC.
6. A.C. may be 1/2' max. agg. only with prior approval of City Engineer.

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	123
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Dead–End Barricade



Notes:

1. All posts shall be redwood or plastic.
2. Entire barrier shall be painted white–3 coats.
3. Install one fully reflective red Type N Marker 18"x 18" at centerline. (& 12' right of ℄ when c–c width is over 60'.)
   Backing: 0.080 in aluminum 6061T6 alloy.
   Reflectorization: Wide angle flat top Scotchlite high intensity reflective sheeting.
   Mount with 5/16 ø bolts w/double nuts.
4. Servicable portions of barricades being removed may be reused at new locations as approved by the Engineer.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

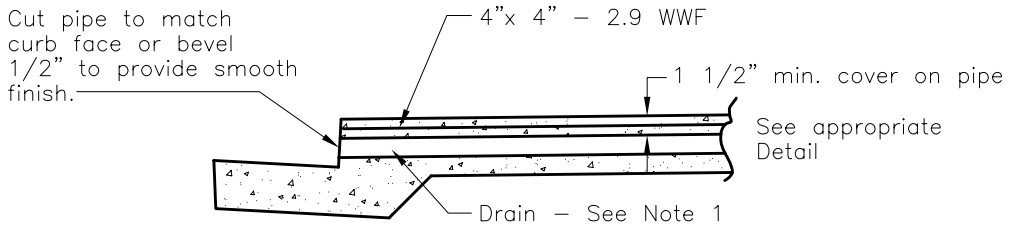
12/28/00
Date

STD PLAN
128

CITY OF LODI

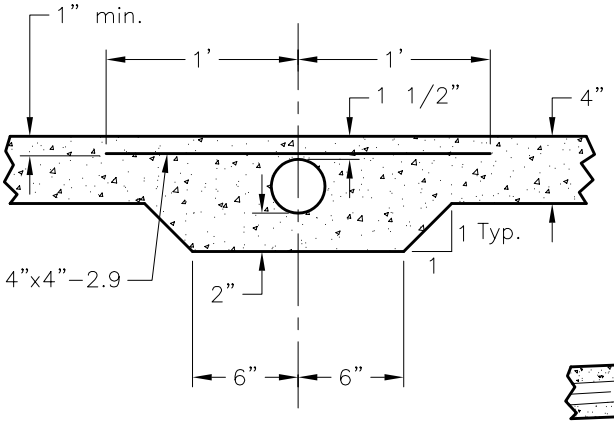
PUBLIC WORKS DEPARTMENT

Through–the–Curb Drain

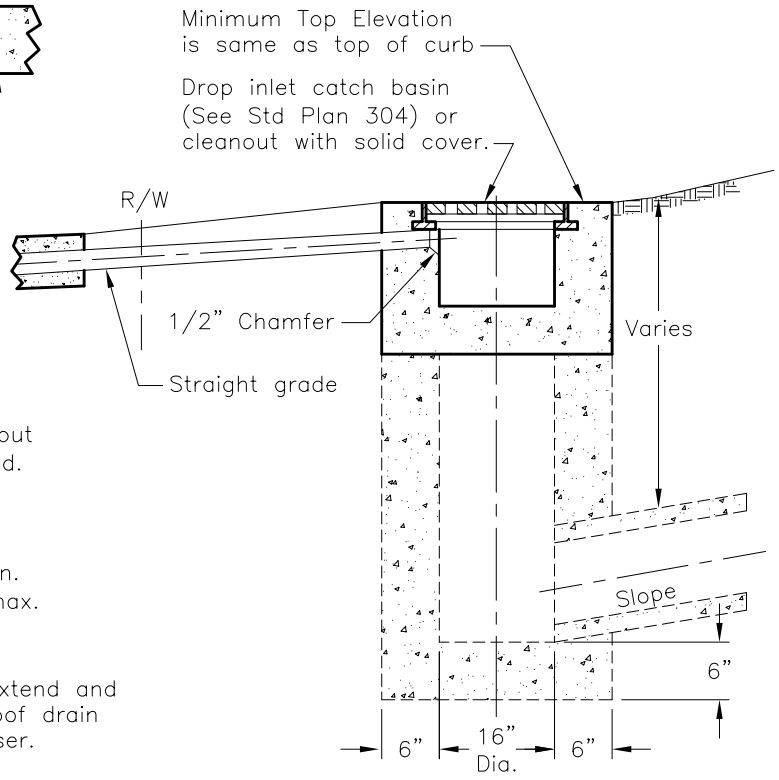


Section

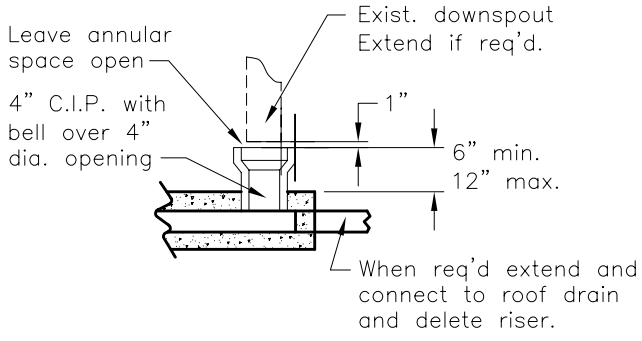
See Note 3



Drain Section



Yard Drain Detail



Roof Drain Detail

Notes:

1. Pipe alternates: 3" x 4"–26 Ga. Galv. downspout pipe
   3" x 4" round pipe–Sch 40 PVC, CIP or steel
2. Curb, gutter & sidewalk dimensions to match adjacent construction.
3. For installations in existing sidewalk, saw cut and remove 20" min width of sidewalk and curb. Gutter may be left in place.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

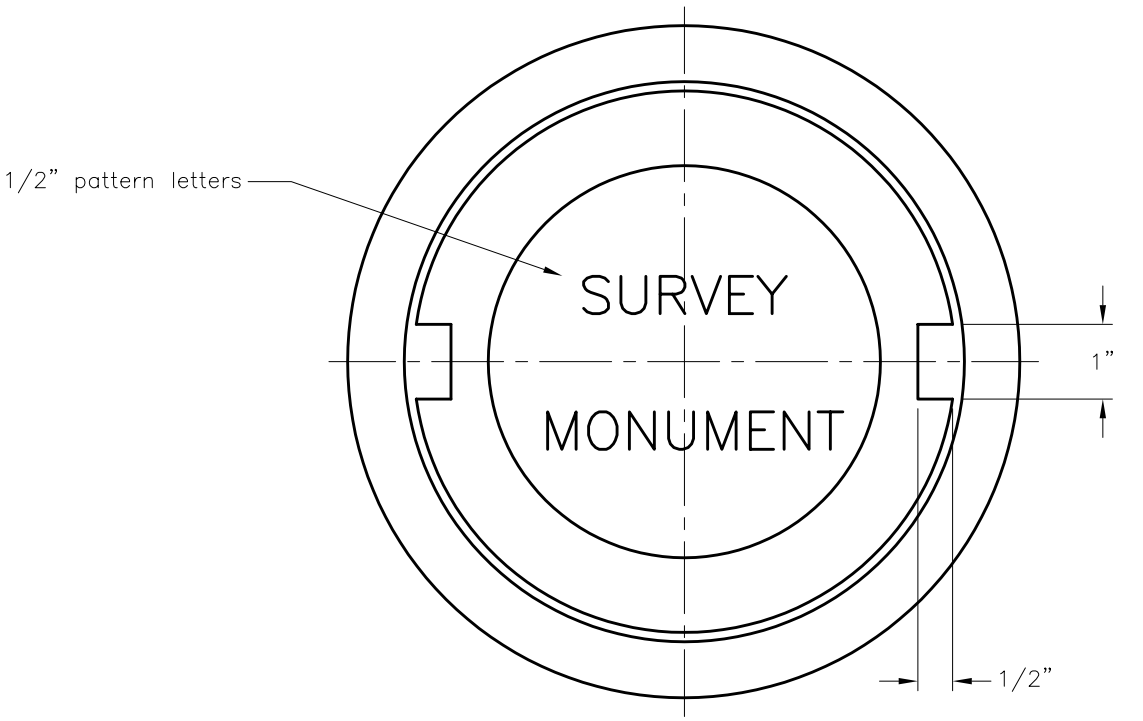
12/28/00
Date

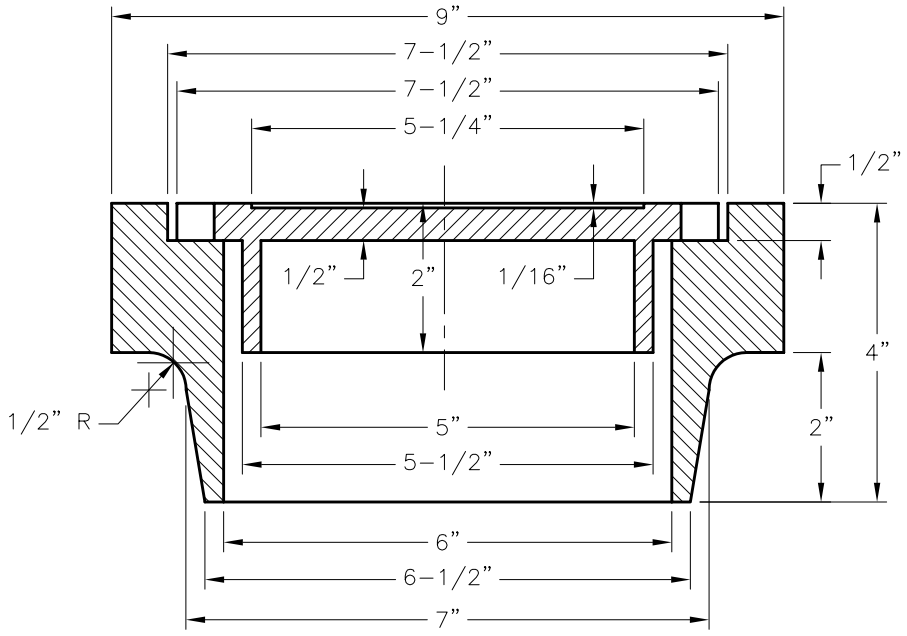
STD PLAN 129

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Survey Monument Assembly (6")





Notes:

1. Frame – Approx. wt. 22 lbs.
2. Cover – Approx. wt. 7 lbs.
3. Material – Cast Iron

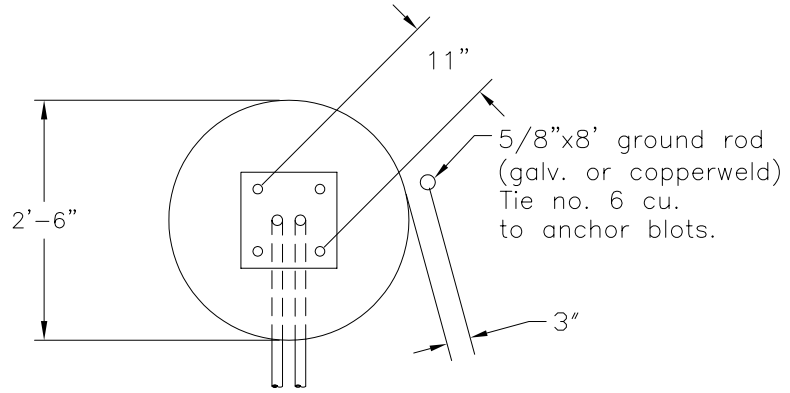
Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	130
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

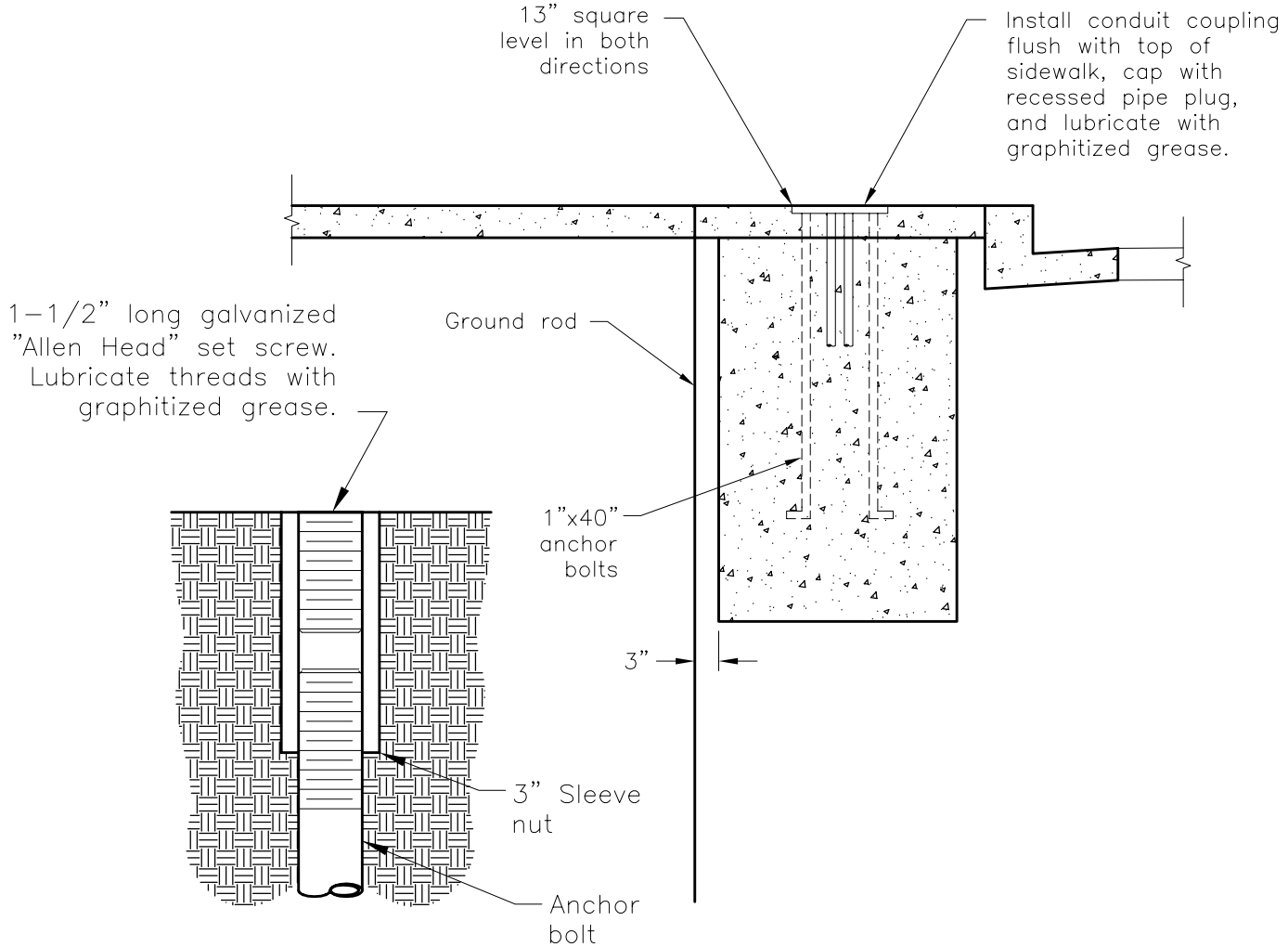
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Street Light Foundation for Future Installation

Bond all conduit and anchor bolts with no. 6 cu.





Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

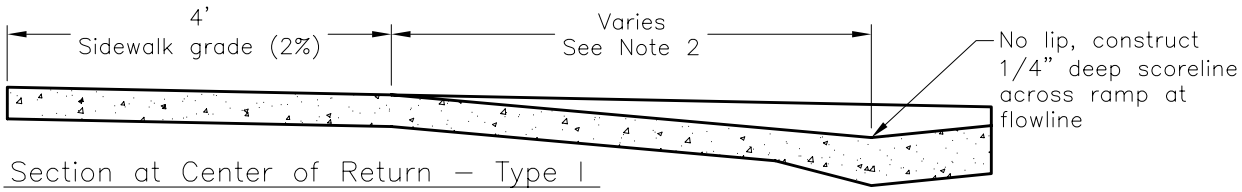
STD PLAN

131

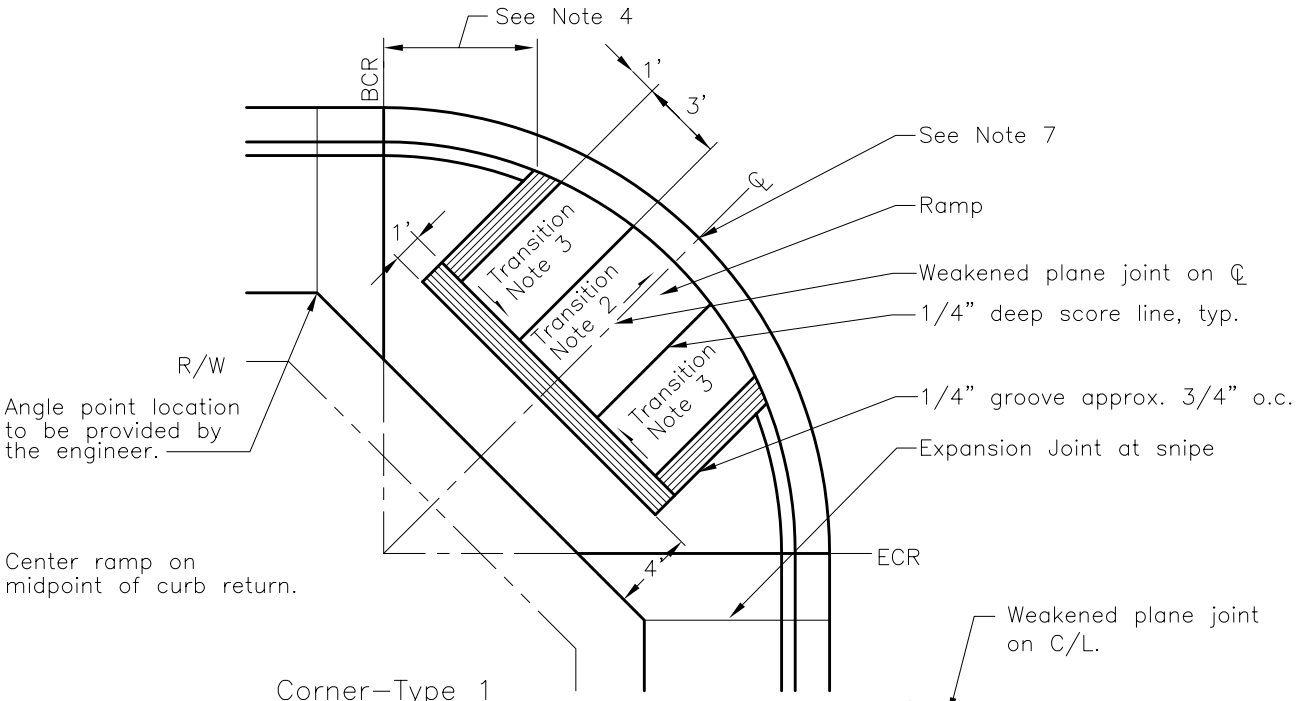
CITY OF LODI

PUBLIC WORKS DEPARTMENT

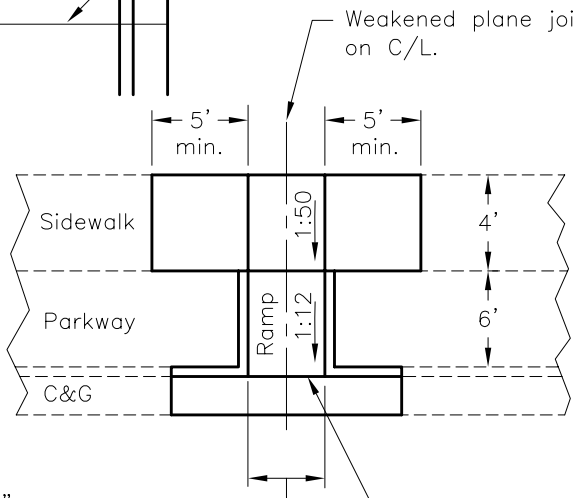
Type 1 Handicap Ramp



Section at Center of Return – Type I



Corner–Type 1



Midblock–Type 1

Notes:

1. Curb return radius as specified.
2. Ramp slope 1:12 maximum, 1:15 minimum.
3. Transition slope 1:10 maximum.
4. For 6" curb height, transition curb height to 4–1/2" from expansion joint to beginning of "transition".
5. See Std. Plan 611 for layout dimensions.
6. The concrete finish of the ramp shall have a transverse broomed surface texture rougher than the surrounding sidewalk.
7. The gutter pan across the route of travel from the ramp to the street shall have a maximum rise of 5%.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	REVISED MIDBLOCK LAYOUT	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

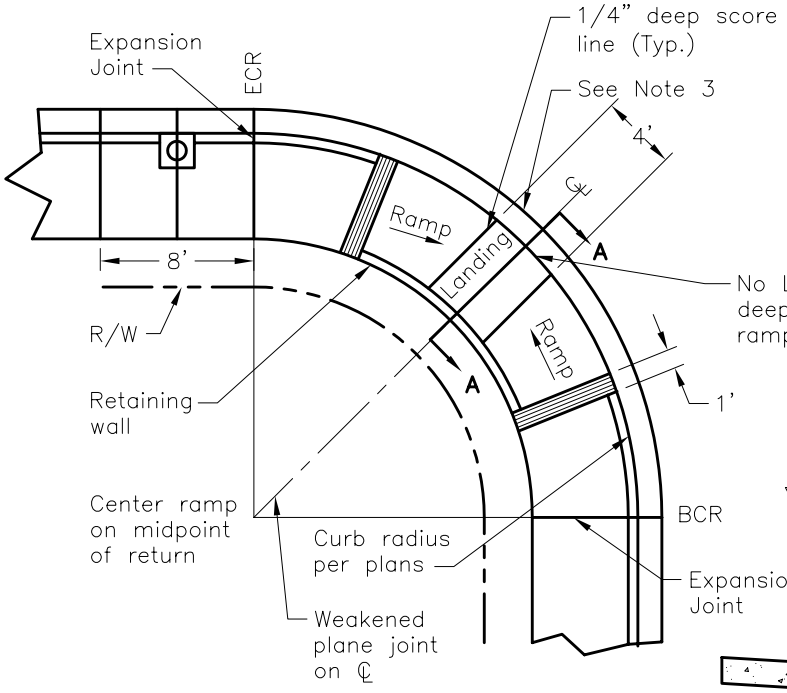
9/25/02
Date

STD PLAN 132A

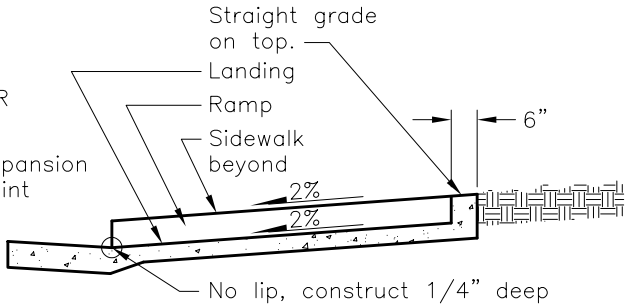
CITY OF LODI

PUBLIC WORKS DEPARTMENT

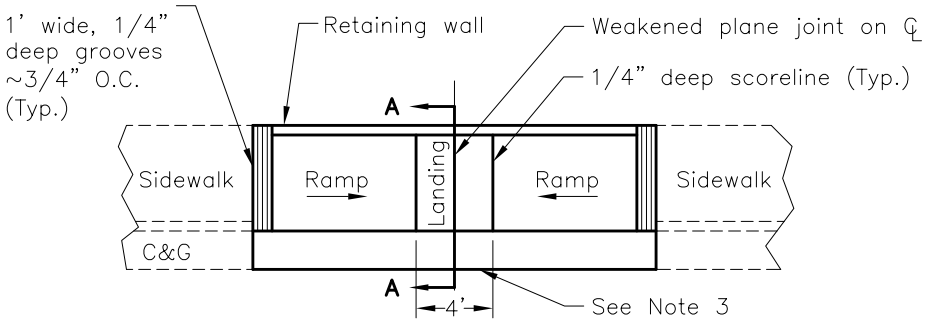
Type 2 Handicap Ramp



Type 2



Section A–A



Midblock–Type 2

Notes:

1. Ramp slope 1:12 maximum 1:15 minimum. 2% max. sidewalk crossfall.
2. The concrete finish of the ramp shall have a transverse broomed surface texture rougher than the surrounding sidewalk. The landing shall have a coarse broom finish.
3. The gutter pan across the route of travel from the ramp to the street shall have a maximum rise of 5%.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	UPDATE PER FIRST REVISION	
Date 12\00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

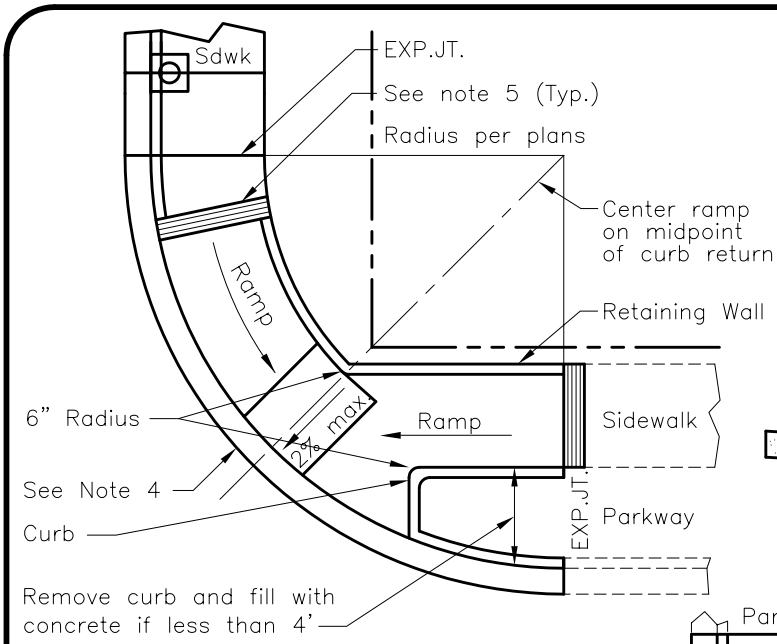
STD PLAN

132B

CITY OF LODI

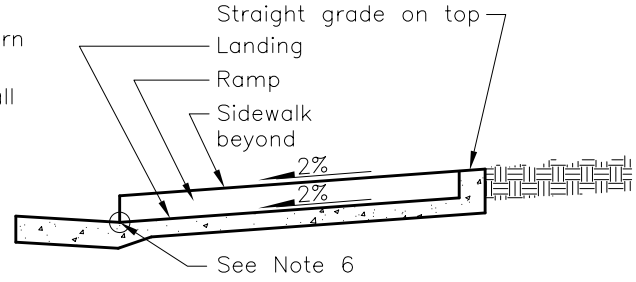
PUBLIC WORKS DEPARTMENT

Type 3 & 4 Handicap Ramps



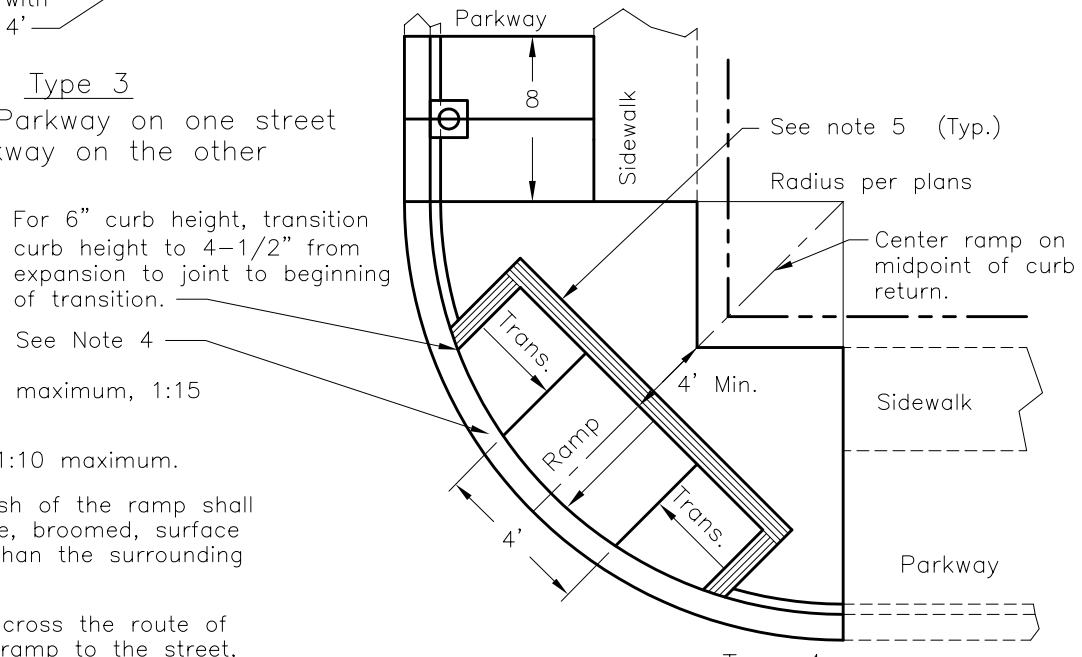
Type 3

Conditions: Parkway on one street no parkway on the other



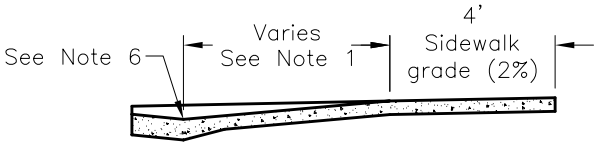
Section at Center of Return

Type 3



Type 4

Conditions: Parkway on both streets



Section at Center of Return

Type 4

Notes:

1. Ramp slope 1:12 maximum, 1:15 minimum.
2. Transition slope 1:10 maximum.
3. The concrete finish of the ramp shall have a transverse, broomed, surface texture rougher than the surrounding sidewalk.
4. The gutter pan across the route of travel, from the ramp to the street, shall have a maximum rise of 5%
5. The ramp shall have a 12" wide border with 1/4" grooves approximately 3/4" on center.
6. Transition from ramp to gutter shall be flush and free of abrupt changes. Construct 1/4" deep scoreline across ramp at flowline.
7. Retaining wall at back of ramp shall be constructed with a 6" radius at the corner.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	UDATE PER FIRST REVISION	
Date 12\00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

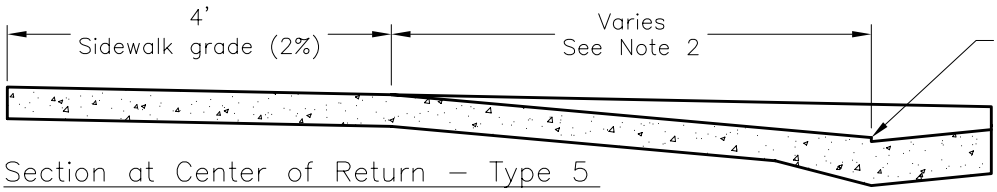
STD PLAN

132C

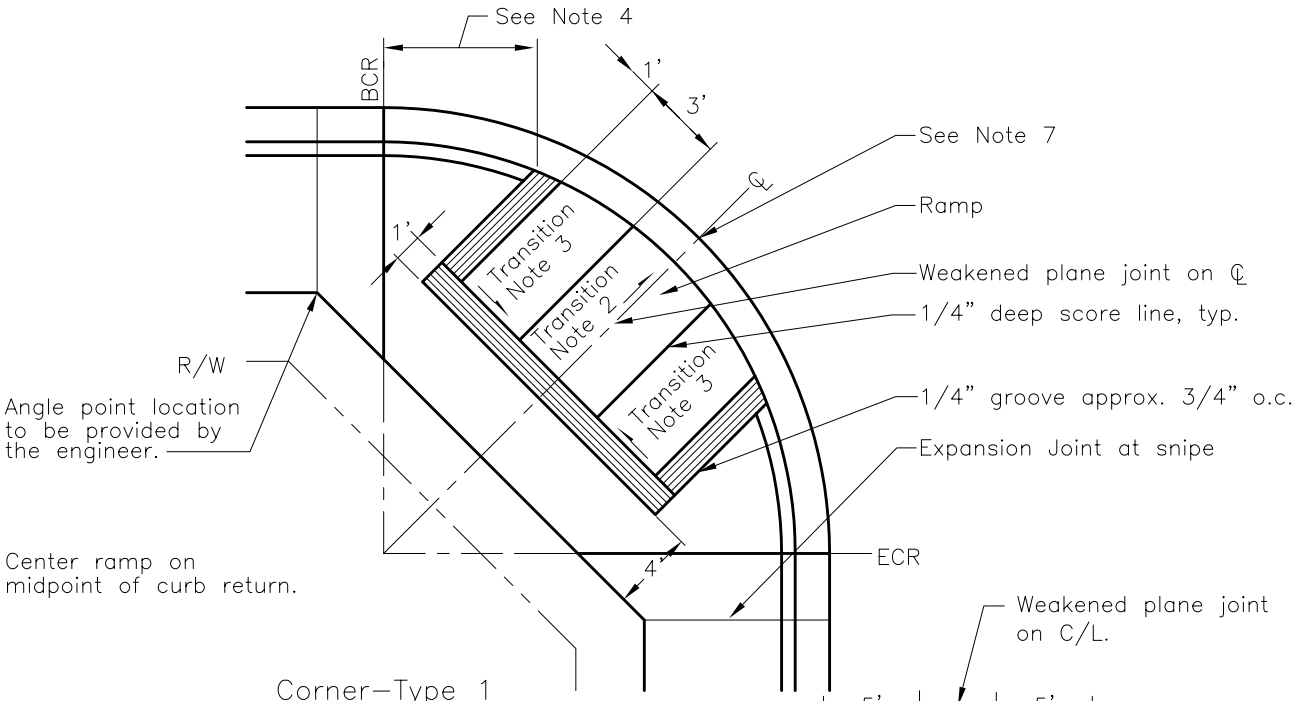
CITY OF LODI

PUBLIC WORKS DEPARTMENT

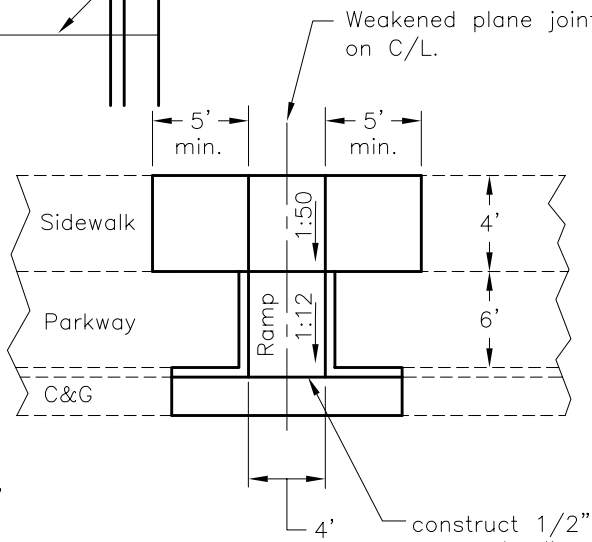
Type 5 Handicap Ramp



Section at Center of Return – Type 5



Corner–Type 1



Midblock–Type 1

Notes:

1. Curb return radius as specified.
2. Ramp slope 1:12 maximum, 1:15 minimum.
3. Transition slope 1:10 maximum.
4. For 6" curb height, transition curb height to 4–1/2" from expansion joint to beginning of "transition".
5. See Std. Plan 611 for layout dimensions.
6. The concrete finish of the ramp shall have a transverse broomed surface texture rougher than the surrounding sidewalk.
7. The gutter pan across the route of travel from the ramp to the street shall have a maximum rise of 5%.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED 1/2" LIP AT FLOWLINE	
Date 12/00			REVISED MIDBLOCK LAYOUT	

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

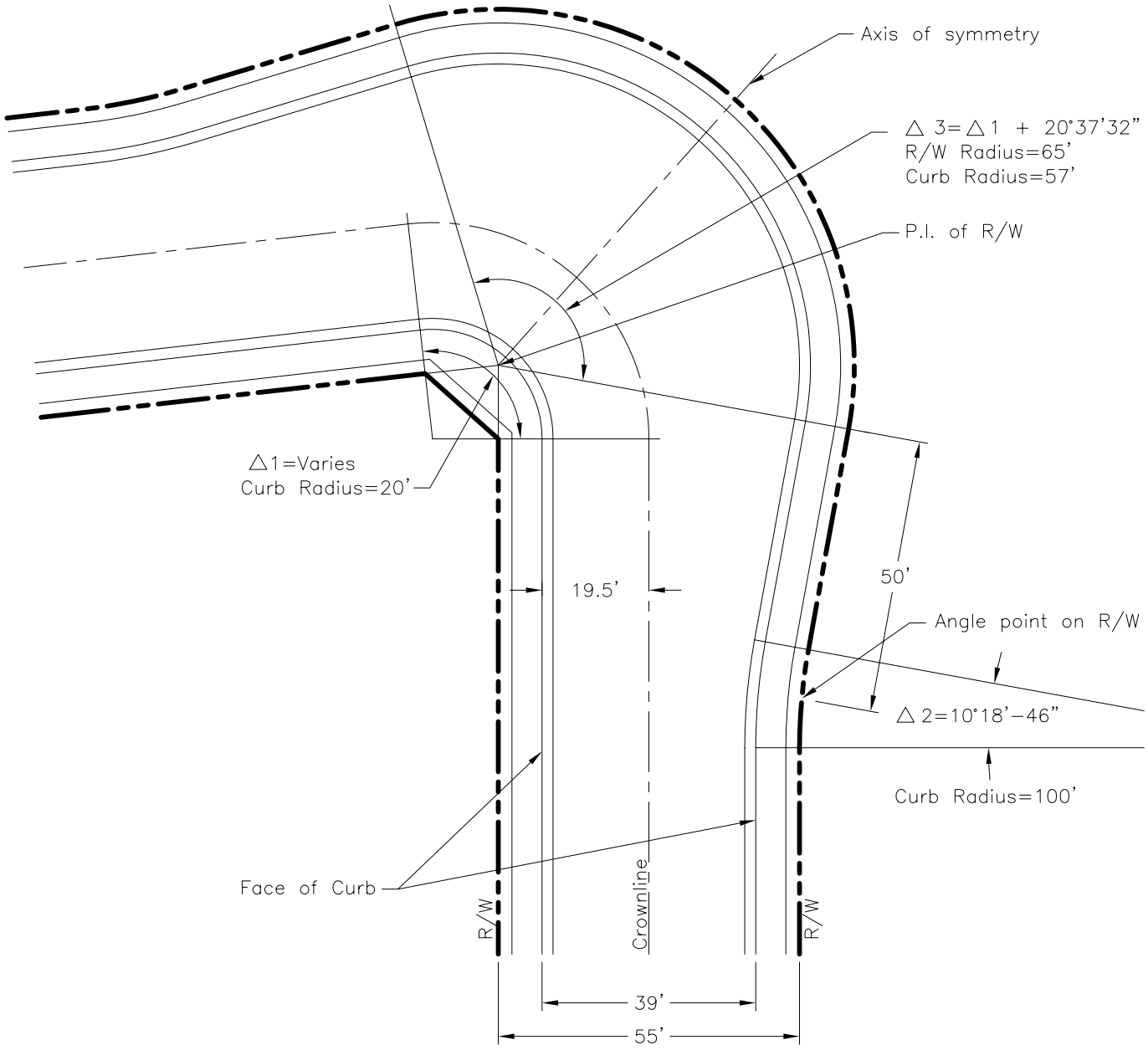
STD PLAN

132D

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Residential Street Knuckle

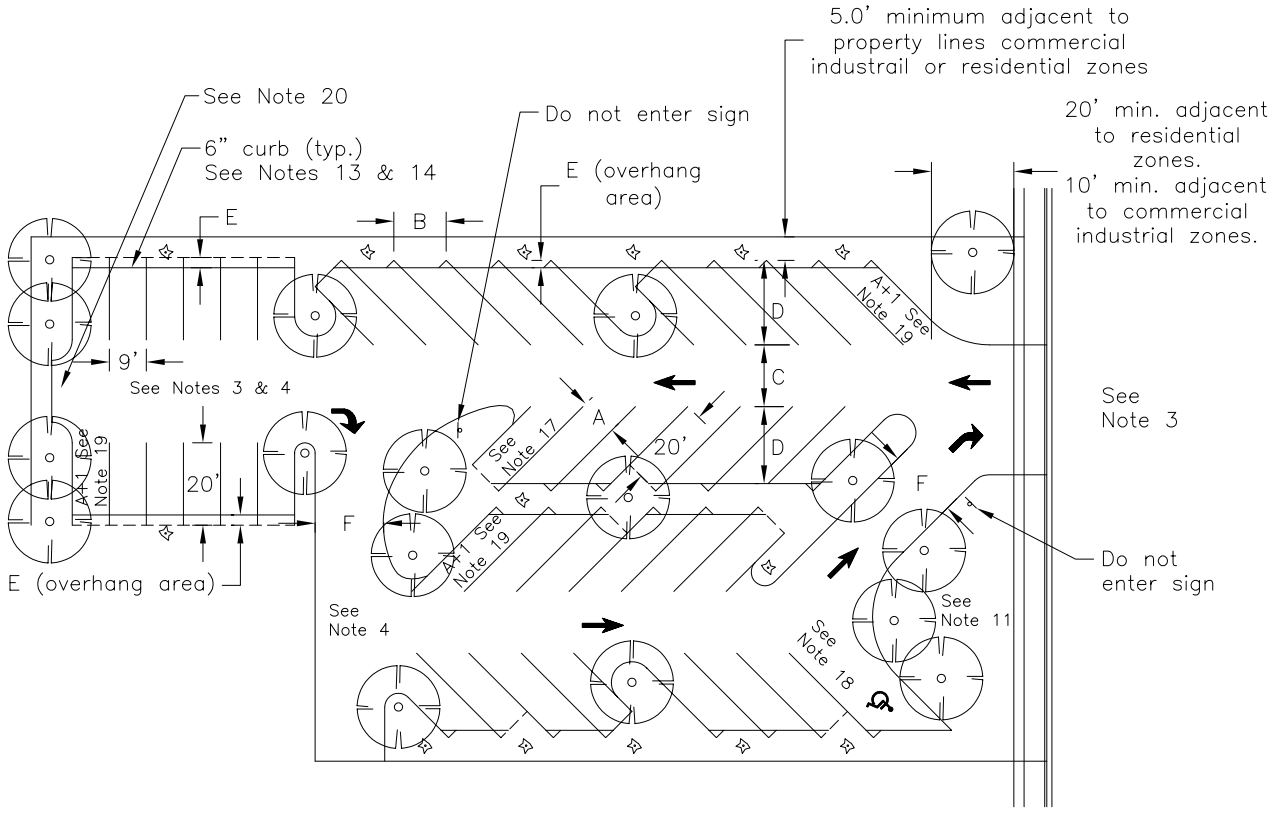


Dr. KT	No.	Date	Revision	Appr.	Approved By: F. Wally Sandelin, City Engineer, R.C.E. 39895 — 12/28/00 Date
Ch. WS					STD PLAN 133
Date 12\00					

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Parking Standards



Minimum Parking Lot Standards						
Parking Angle*	"A"	"B"	** "C"	"D"	"E"	"F"
Parallel Parking	10	24	14	10	3	See Note 3
45°	9 9.5 10	12.7 13.4 14.2	15 14 14	20.5 20.8 21.2	1.8 1.8 1.8	17 17 17
60°	9 9.5 10	10.5 11 11.6	19 18 18	21.8 22.1 22.3	2.2 2.2 2.2	14 14 14
90°	9 9.5 10	9 9.5 10	25 24 24	20 20 20	2.5 2.5 2.5	14 14 14

* Dimensions for other parking angles must be evaluated separately for approval.
** For two-way traffic minimum is 24 feet.

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	134
Date 12\00					F. Wally Sandelin City Engineer R.C.E. 39895 Date	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Parking Standards

Notes:

1. A minimum number of parking spaces required is established by the City of Lodi Ordinance.
2. All parking stalls shall be marked in an acceptable manner.
3. Lots designed for more than four cars must have two–way access.
4. Where two parking angles can be used in a single lot, they shall be located in separate areas of the lot (except as shown on layout.)
5. Any parking layout necessitating a cul–de–sac or similar type of turning facility for reversing direction of travel in order to exit from the area or any parking spaces will generally be discouraged, and it should be approved by the City Staff prior to the incorporation into the plan.
6. Residential parking for more than four cars and parking in commercial and industrial areas shall not be designed to require backing out onto any public street Rights–of–Way.
7. Two–way traffic aisles shall be a minimum of 24 feet wide.
8. Parking or backing area within a parking lot shall not extend into the public Rights–of–Way.
9. When a long driveway having only a single ingress is necessary within a development, provisions should be made for the maneuvering of emergency vehicles and the arrangement approved by City Staff prior to its incorporation into the plan.
10. All parking lots shall have an adequate structural section and shall be paved with a minimum of two inches of asphalt concrete.
11. All unusable areas shall be landscaped where practical.
12. Landscaped areas within or adjacent to the parking area shall provide for a minimum of one shade tree for every four parking stalls. Depending on type and size of shade tree, requirements may be modified by the City Site Plan and Architectural Review Committee.
13. Six–inch high concrete curbs shall separate all paved and landscaped areas.
14. The concrete curbing shall be used as wheel stops where possible. The use of bumper blocks is discouraged.
15. Landscaped areas shall be provided between asphalt areas and all building structures, fences and property lines. Hardscaping may be used where pedestrian access is a necessity as determined by the City Site Plan and Architectural Review Committee.
16. Landscaping shall conform to the City of Lodi Landscape Guidelines.
17. End stalls should be protected from the turning movements of other cars with a minimum 5' landscape planter.
18. Handicapped stalls shall be a minimum of nine feet wide plus an adjacent five foot minimum access zone, per Title 24, Chapter 2–7102, California Administrative Code.
19. End stalls and stalls adjacent to curbings shall be a minimum of ten feet wide.
20. Dead end 90° parking shall be provided with adequate turning room.
21. Parking requirements for the interior of parking lots on industrial lots surrounded solely by heavy industrially zoned properties may be modified by the Site Plan and Architectural Review Committee.

Reference: Planning Commission Resolution 77–2, 7/11/77

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

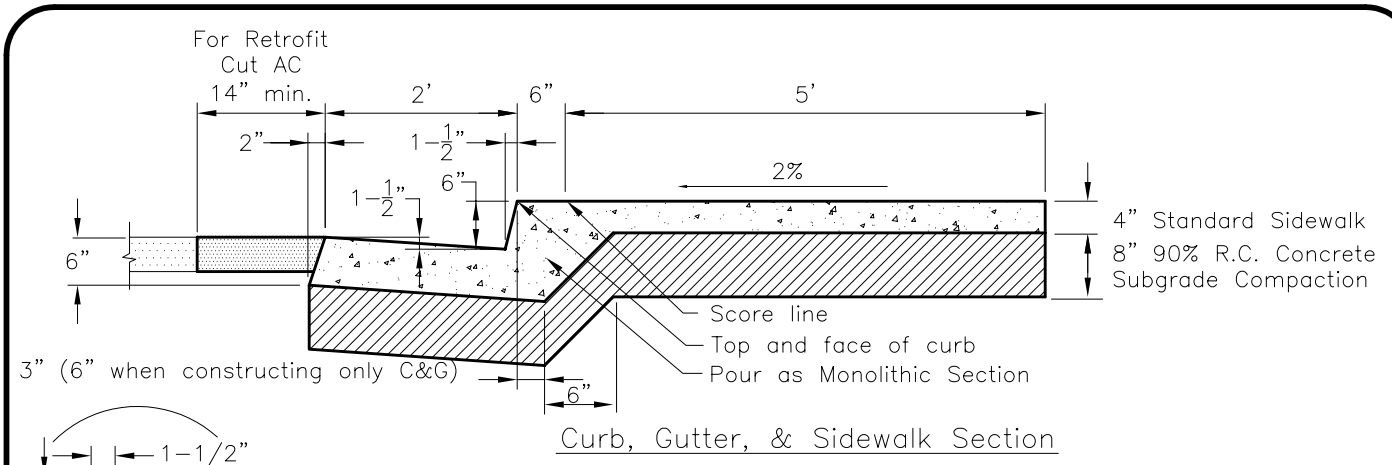
Approved By: F. Wally Sandelin, City Engineer, R.C.E. 39895 — 12/28/00 Date

STD PLAN 134

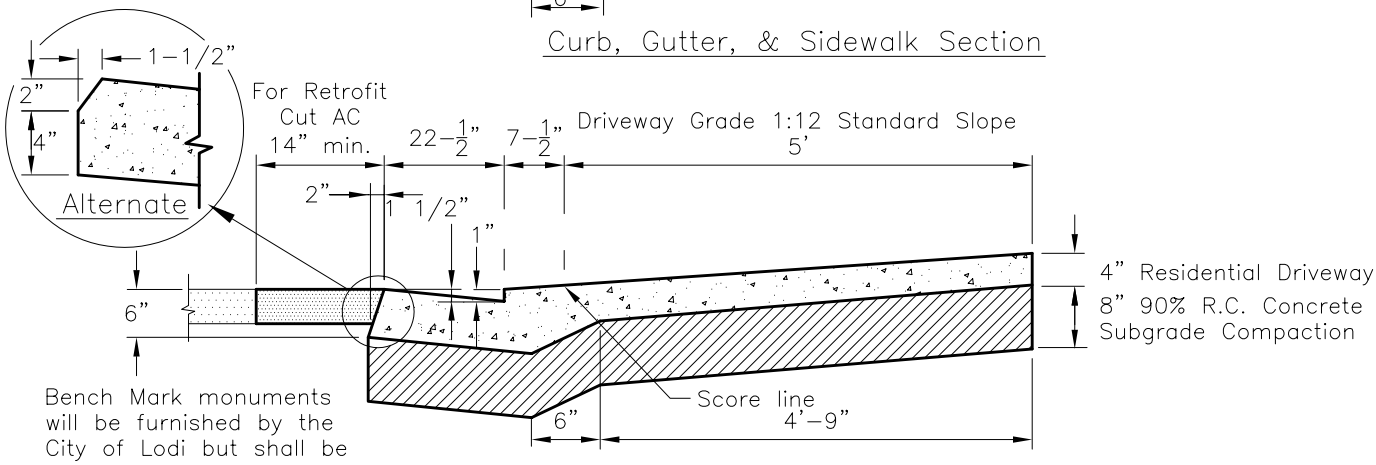
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Vertical–Type Curb, Gutter, Sidewalk and Residential Driveway

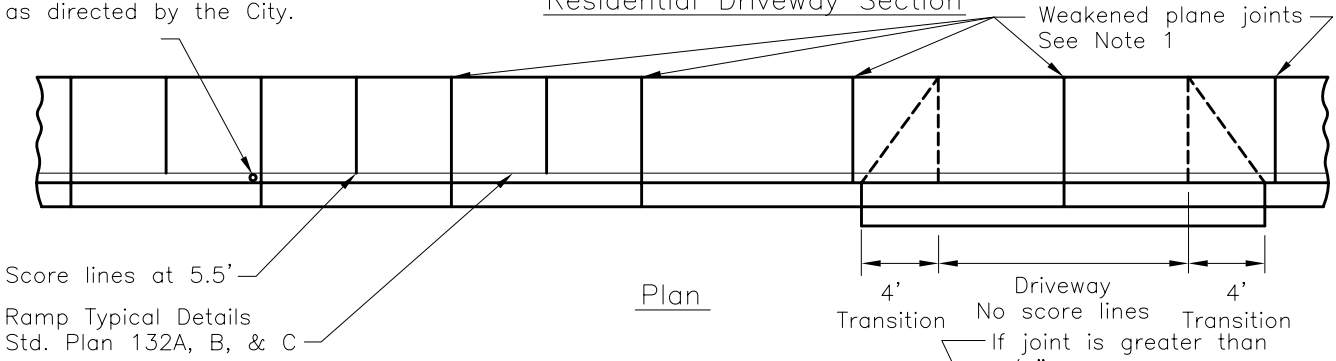


Curb, Gutter, & Sidewalk Section



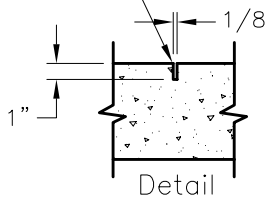
Bench Mark monuments will be furnished by the City of Lodi but shall be installed by the contractor as directed by the City.

Residential Driveway Section



Plan

If joint is greater than 1/4" wide it shall be filled with petrolastic material.



Detail

Weakened Plane Joint

Notes:

1. Construct weakened plane joints at 11' and at centerline of driveway.
2. Use impervious membrane cure. Broom finish.
3. Class B concrete per Section 90 of Std. Spec., 1–1/2" max. aggregate.
4. Construct expansion material at 200' max.
5. All exposed edges shall be rounded to 1/2" radius.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED CURB HEIGHT	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

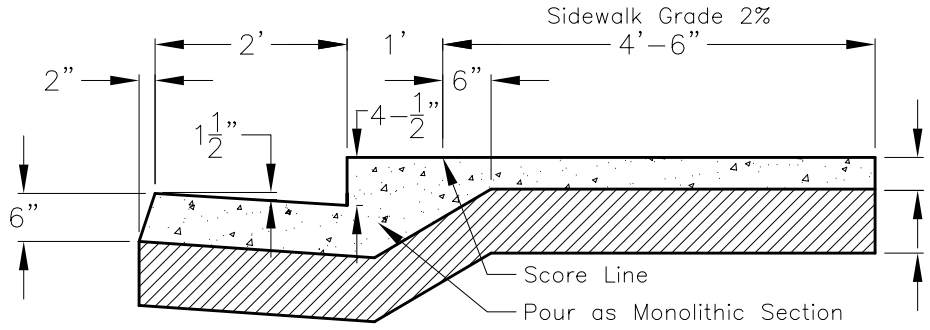
9/25/02
Date

STD PLAN 135

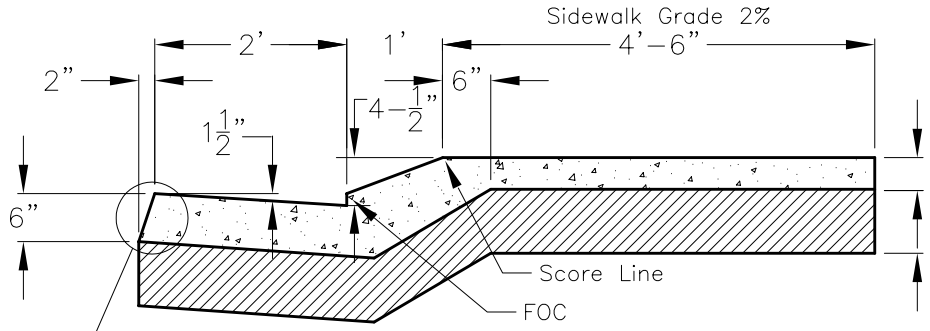
CITY OF LODI

PUBLIC WORKS DEPARTMENT

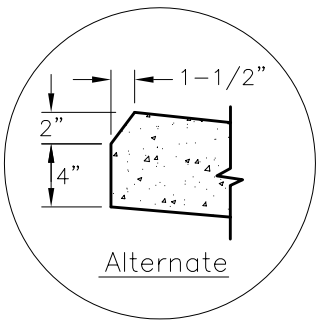
Rolled Curb, Gutter & Sidewalk



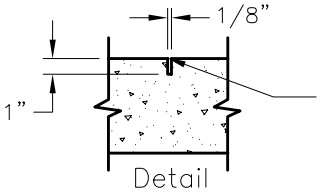
Curb Return Section



Sidewalk Section



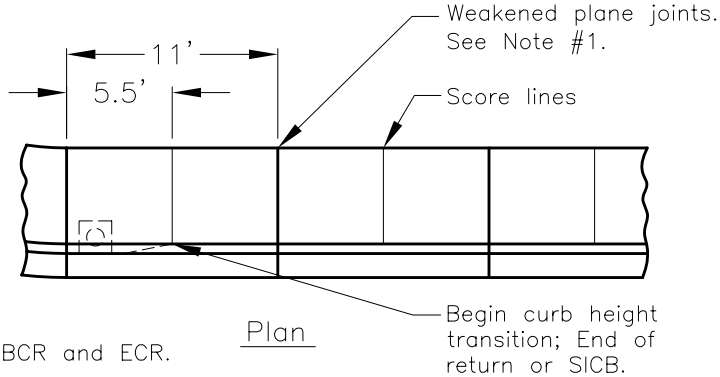
Alternate



If joint is greater than 1/4" wide it shall be filled with petrolastic material.

Detail

Weakened Plane Joint



Plan

Notes:

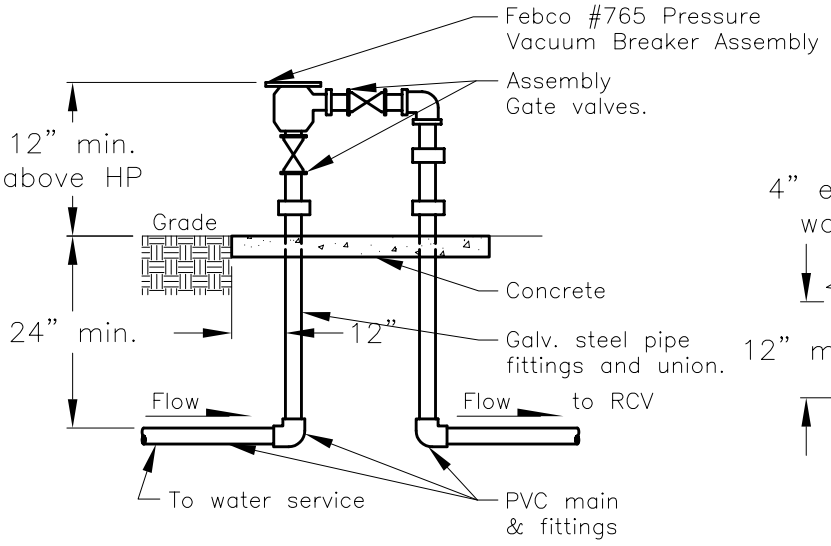
1. Construct weakened plane joints at 11'.
2. Use impervious membrane cure. Broom finish.
3. Class B concrete per Section 90 of Std. Spec., 1-1/2" max. aggregate.
4. Construct expansion joints at 200' max. and at BCR and ECR.
5. All exposed edges shall be rounded to 1/2" radius.

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	136
Date 12/00					F. Wally Sandelin City Engineer R.C.E. 39895 Date	

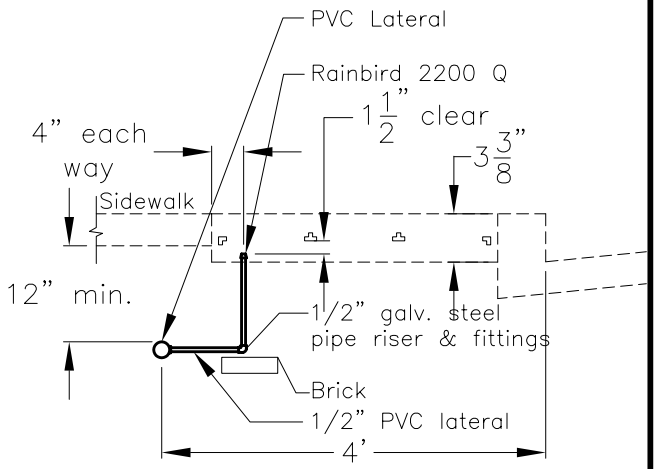
CITY OF LODI

PUBLIC WORKS DEPARTMENT

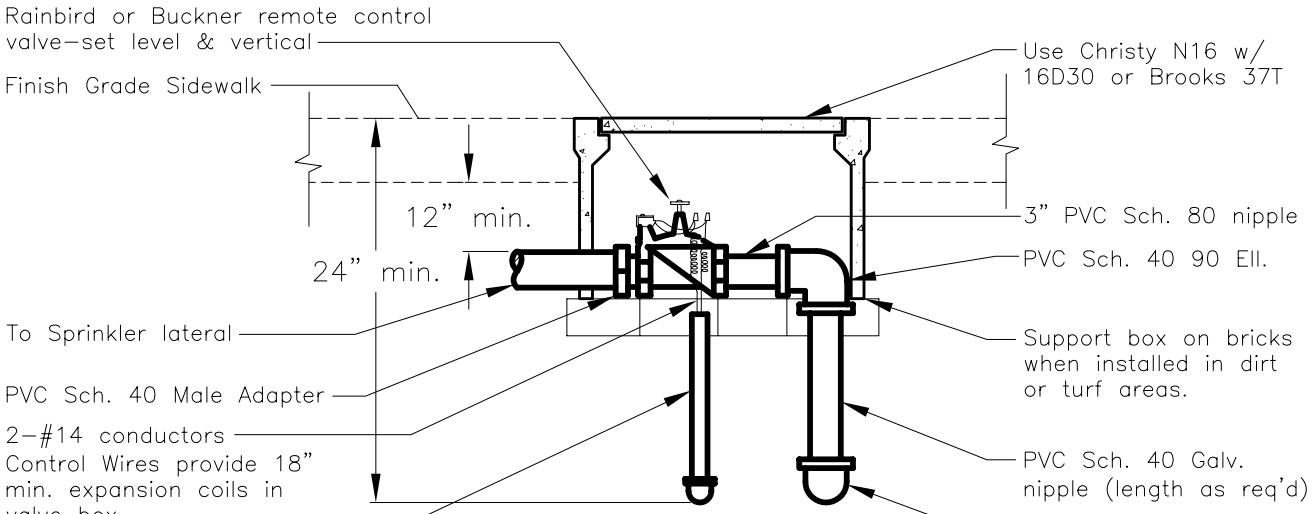
Tree Well Sprinkler System Installation



Pressure Vacuum Breaker



Bubbler Riser



Remote Control Valve
Not to Scale

Notes:

1. Use Rainbird, or Irri—trol sprinkler system controller, disconnect switch required. Install controller and disconnect in post mounted, weatherproof cabinet (w/hasp for City padlock).

2. Plastic pipe shall be Polyvinyl Chloride (PVC), Type 1120 or 1220. Class per Table. Threaded pipe shall be Schedule 80 PVC. Fittings shall be molded, medium weight, Schedule 40 PVC. Street crossings, including control wire conduit, shall be steel pipe.

3. Steel pipe shall conform to ASTM A—120 and shall be Schedule 40, galvanized. Fittings shall be 150 lbs., banded pattern, galvanized malleable iron.

4. Control wires shall be installed in 1" conduit.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

STD PLAN 137

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Tree Well Sprinkler System Installation

PVC Pipe Class Table	
Size	Class
In turf/planter	
1/2"	Class 315 PVC
3/4"	Class 200 PVC
1"+	Class 160 PVC
Mainline (constant pressure)	
2"+	Class 200 PVC
Under concrete or paving	
All	Schedule 80

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By: F. Wally Sandelin 12/28/00

F. Wally Sandelin
City Engineer
R.C.E. 39895

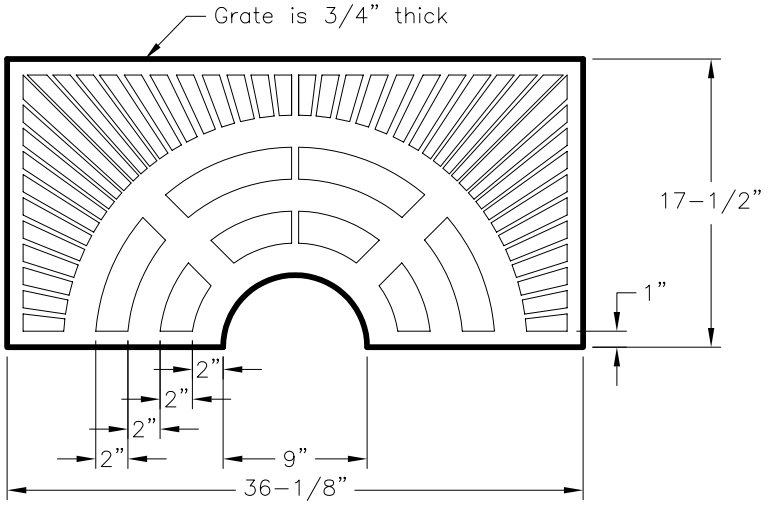
Date

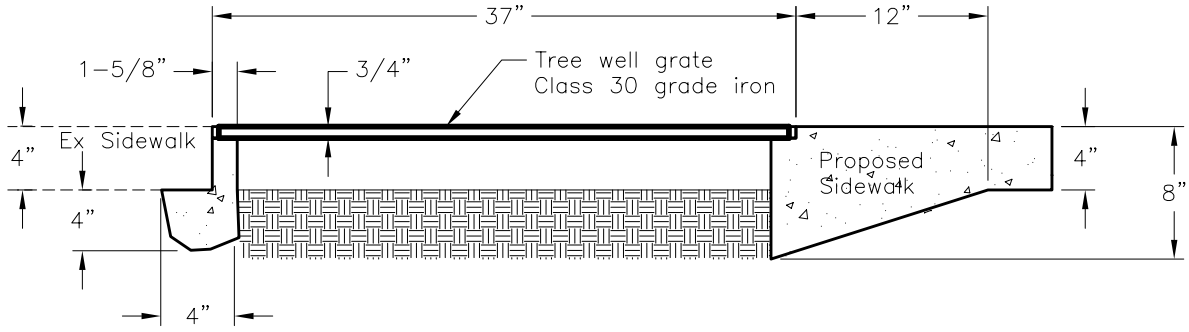
STD PLAN 137

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Grated Tree Well





Notes:

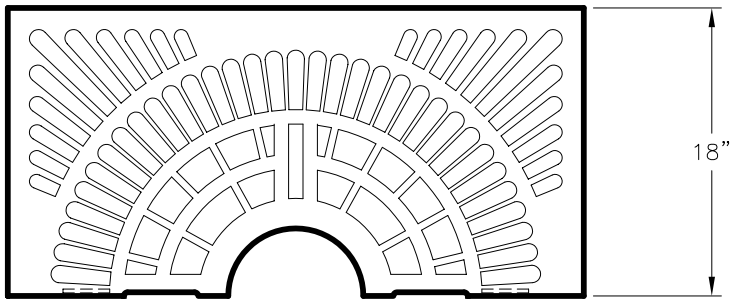
1. If the tree is not planted, the opening shall be barricaded.
2. When tree wells are installed in the existing sidewalk, the sidewalk shall be sawed a minimum of 1-1/2" in depth.
3. Place one #4x2' rebar diagonally at each corner.
4. Reinforcing steel shall not be placed through sidewalk weakened plane joints.

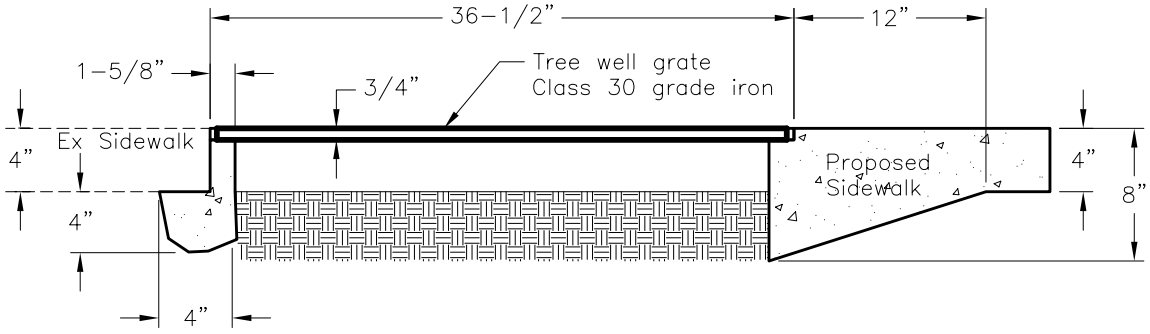
Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	138A
Date 12/00					City Engineer Date R.C.E. 39895	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Grated Tree Well





Notes:

1. If the tree is not planted, the opening shall be barricaded.
2. When tree wells are installed in the existing sidewalk, the sidewalk shall be sawed a minimum of 1-1/2" in depth.
3. Place one #4x2' rebar diagonally at each corner.
4. Reinforcing steel shall not be placed through sidewalk weakened plane joints

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

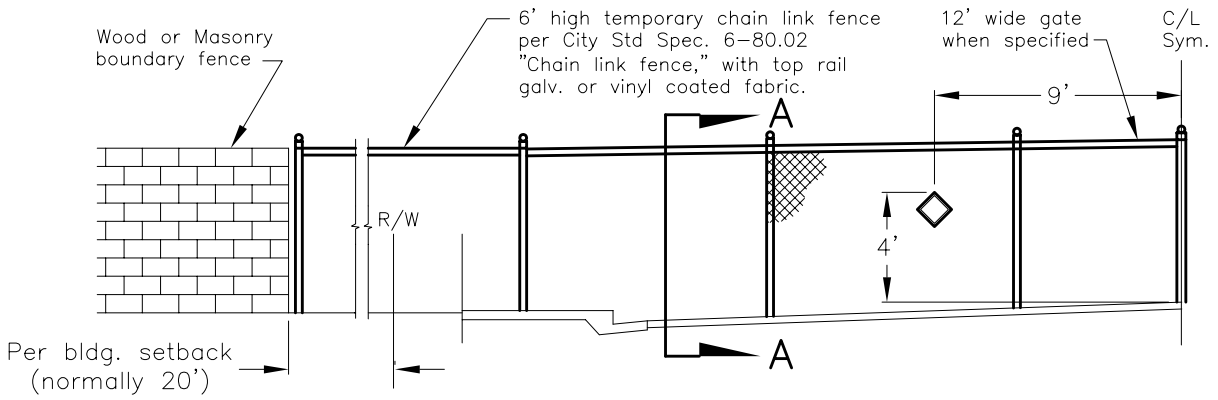
STD PLAN

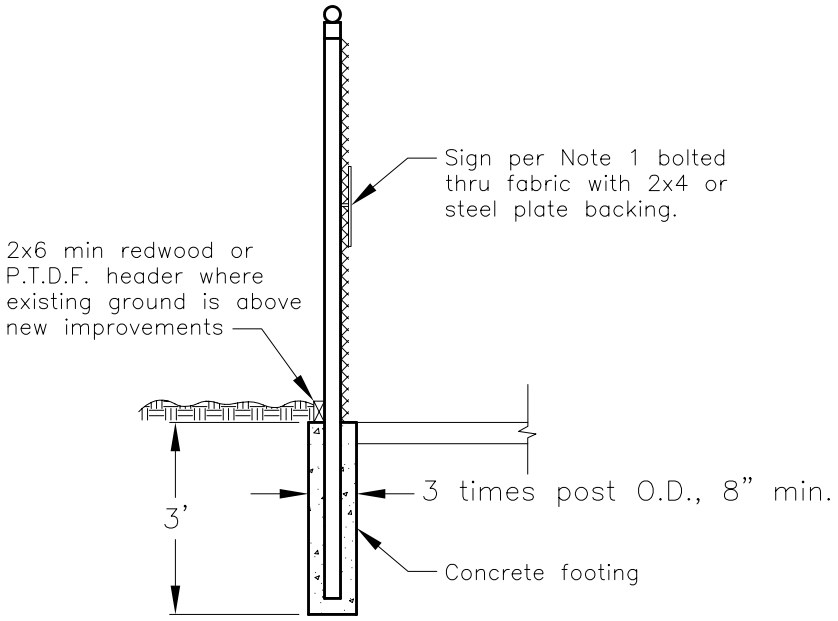
138B

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Dead–end Barricade (Fence Type)





Section A–A

Notes:

1. Install two fully reflective red Type N Markers, 18"x18".
   Backing: 0.080" aluminum 6061T6 alloy
   Reflectorization: high intensity grade
   Mounting: two 5/16" bolts with double nuts and backing, bend bolts.

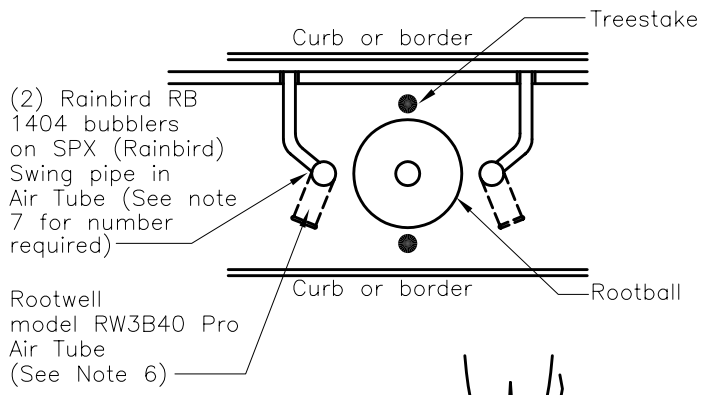
2. Serviceable portions of barricades being removed may be reused at new location as approved by the Engineer.

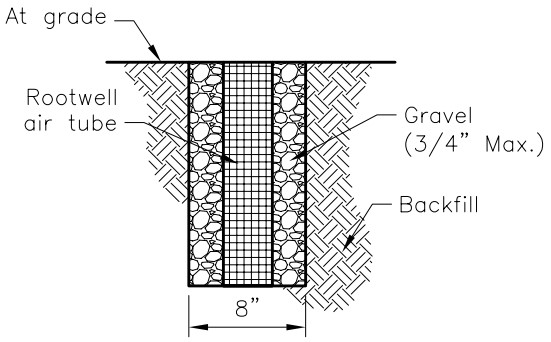
Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	139
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

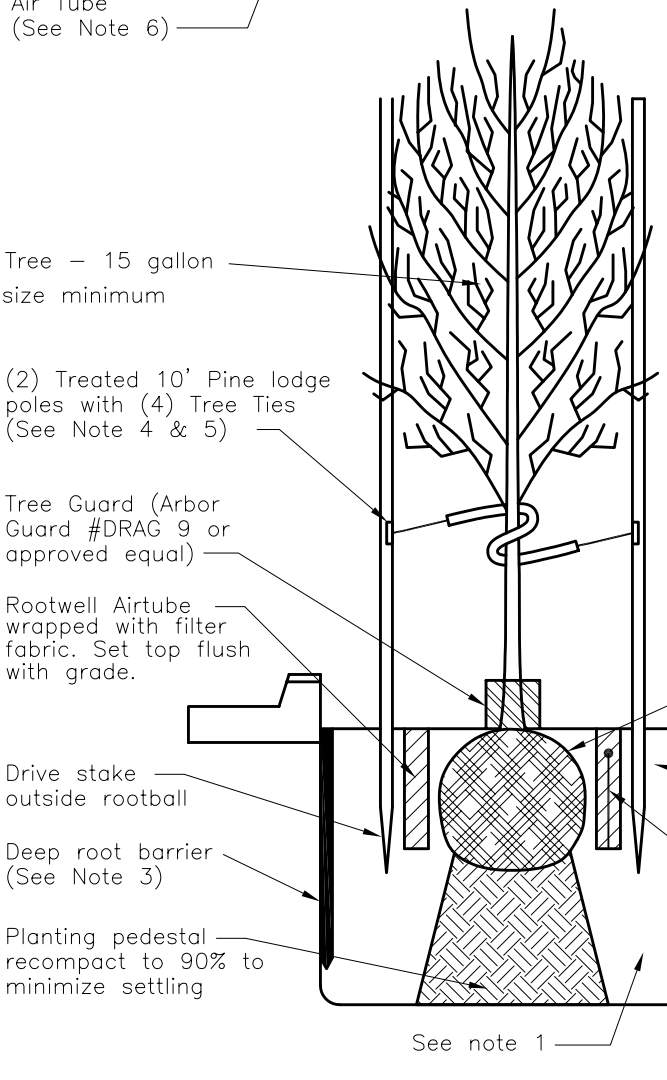
Tree/Well Planting and Irrigation

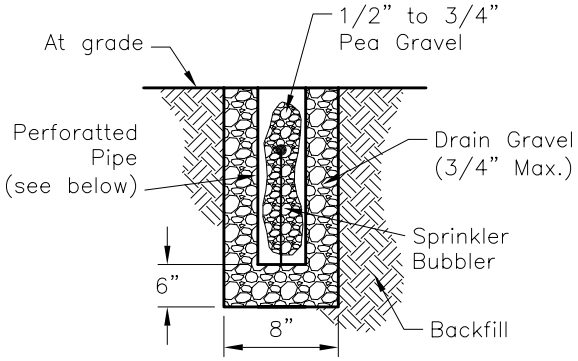




Alternate Rootwell Installation

(Without Filter Fabric)





Bubbler Installation

Sheet 1 of 2

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED NOTES 7 THRU 10 &	
Date 12/00			REVISED NOTES 3 & 4	

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

STD PLAN

140

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Tree/Well Planting and Irrigation Notes

Notes:

1. When soil analysis is required (by City officials prior to job commencement), all backfill soil shall have additional fertilizer and amendments per soil analysis. All backfill to be clean (preferred native, no imported soil) amended with 10% by volume approved compost, to be placed firmly but uncompacted. Thoroughly soak with water to settle.
2. The entire tree planting area (tree well, island, or strip) shall be excavated to a depth of 5'–0". The pit shall be a minimum of four times wider and two times deeper than the root ball. Scarify Planting Pit And All Four Sides Of Rootball Prior To Planting.
3. Six (6) panels of 24" x 24" Deep Root root barrier (Model #DRUB24, or approved equal) will be required around tree planting area. Place 3 panels at back of curb and 3 panels along edge of sidewalk.
4. Four (4) tree ties shall be used for each tree, and they shall be "Tie–It Super" Tree Tie (1" wide vinyl impregnated nylon) or approved equal.
5. Remove nursery stake when setting new stakes.
6. Air tubes shall be set immediately next to the root ball.
   Apply approved pre–emergent herbicide prior to placement of fir bark or mulch.
7. Install three (3) air tubes in tree well locations and install two (2) air tubes in planter strip areas. Air tubes to be a minimum 18 inches in length.
8. If a discrepancy between this standard and actual on–site conditions occurs, the Contractor is to notify the City Representative immediately, before proceeding with his work, for a decision. The City reserves the right to make deletions, additions, or substitutions in the field as necessary.
9. All trees must meet the standards set forth in ANSI Z60.1 – 1996, (or latest revision) American Standards for Nursery Stock. Particular attention should be paid to section 1.4 container grown specifications.
   All trees will be inspected for acceptable form and condition by the City Tree Operations Supervisor prior to planting. Contact Tree Operations Supervisor at 333–6740 for tree inspection and approval. Unacceptable trees will be replaced by the contractor.
10. City Tree Operations Supervisor and Public Works Inspector shall be notified at least two working days prior to estimated time of setting–out trees so a mutually acceptable time can be scheduled for final tree placement. All trees shall be placed in approximate locations shown on plans by Contractor prior to arrival of city personnel. Final adjustments of locations shall be made by City personnel.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED NOTES 7 THRU 10 &	
Date 12/00			REVISED NOTES 3 & 4	

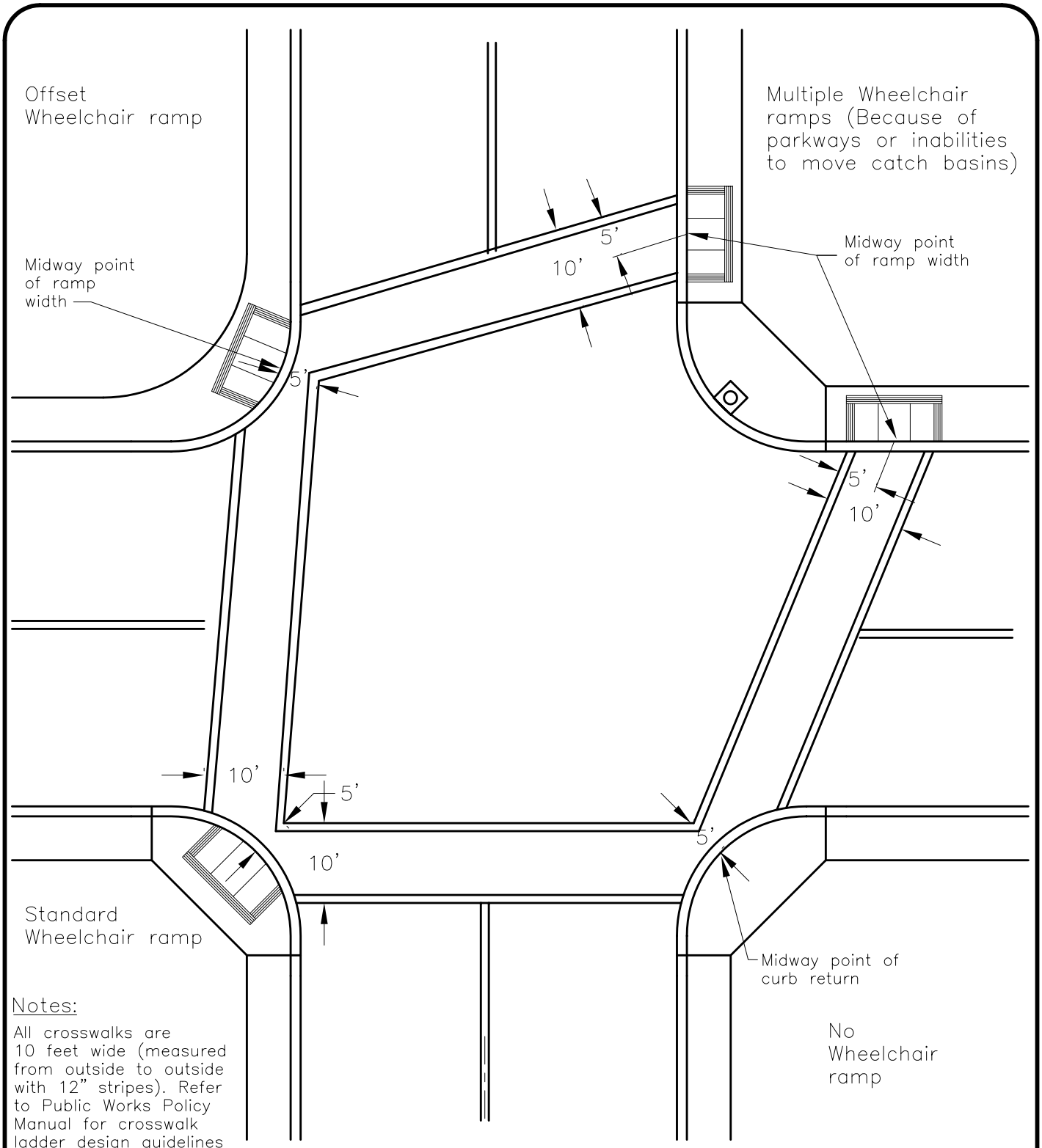
Approved By: F. Wally Sandelin, City Engineer, R.C.E. 39895 — 9/25/02 Date

STD PLAN 140

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Various Crosswalk Layouts



Notes:

All crosswalks are 10 feet wide (measured from outside to outside with 12" stripes). Refer to Public Works Policy Manual for crosswalk ladder design guidelines

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

STD PLAN

141

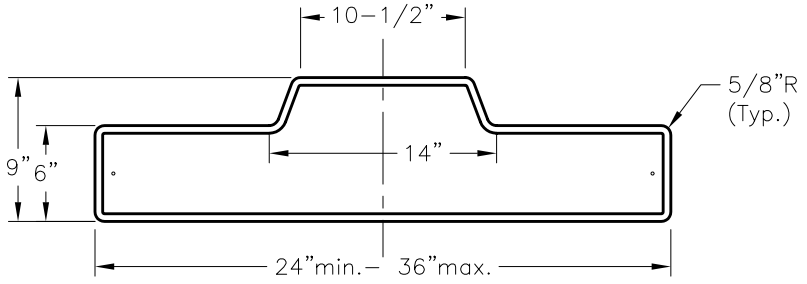
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Street Name Sign System

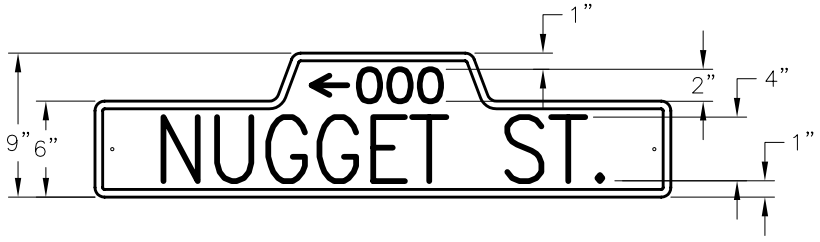
Plate:

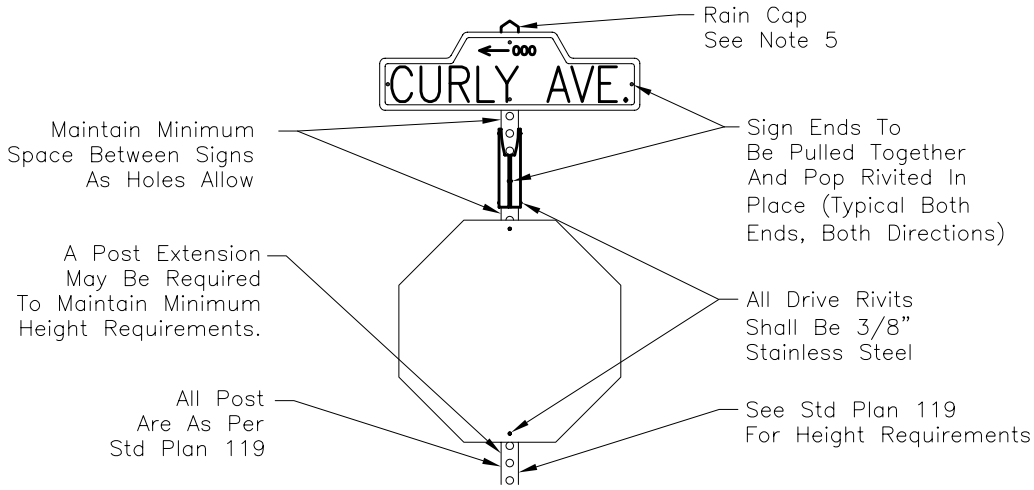
0.063" Aluminum panel–White engineer grade reflective background with 1/4–inch non reflective black border inset 1/4–inch.



Legend:

4" upper case street name & 2" block number with 1–3/4" arrow (all black).





SIGN MOUNTING:

Notes:

1. Block Numbers Shall Be Rounded To The Nearest Hundred.
2. Block Arrow Shall Point In The Direction Of The Block; Not Across The Street.
3. When Cardinal Direction Is Part Of The Street Name, A 2" Upper Case Initial Shall Follow The Block Number, (I.E. 00N, 00S, 00E, 00W).
4. Legend Shall Be Black And Non–Reflective.
5. Cap Post With Square Rain Cap. Post Top Shall Be 1 1/2" Higher Than Top Of Sign.

Dr. KG	No.	Date	Revision	Appr.
Ch. WS	1	9/25	CHANGED TO SQ POST	
Date 12/00				

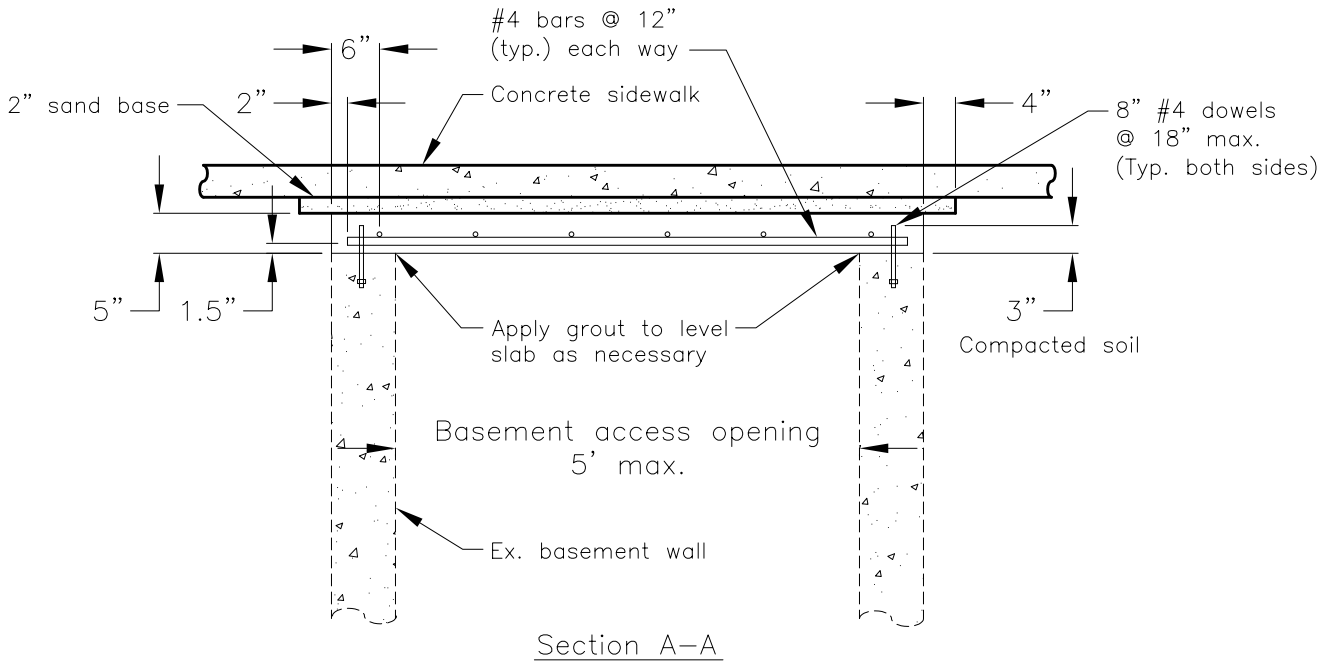
Approved By: F. Wally Sandelin, City Engineer, R.C.E. 39895 — 9/25/02 Date

STD PLAN 142

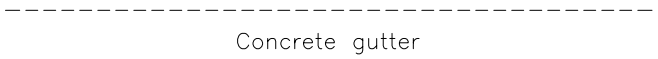
CITY OF LODI

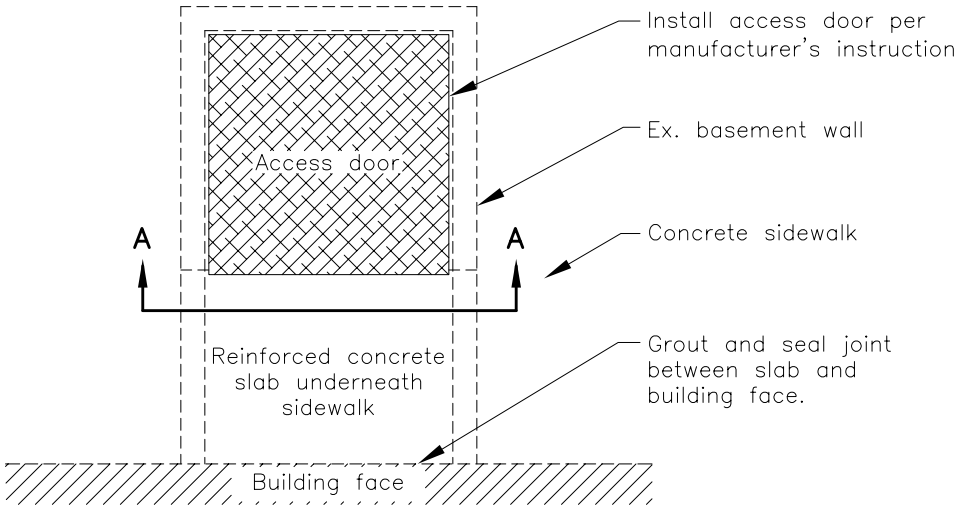
PUBLIC WORKS DEPARTMENT

Concrete Slab for Basement Access Spanning Detail



Section A–A





Notes:

1. All steel reinforcements shall be Grade 40 minimum.
2. All concrete shall have a minimum strength of 2,500 psi @ 28 days.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

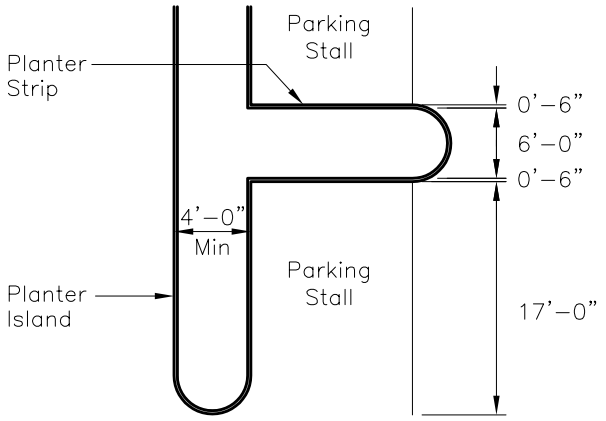
12/28/00
Date

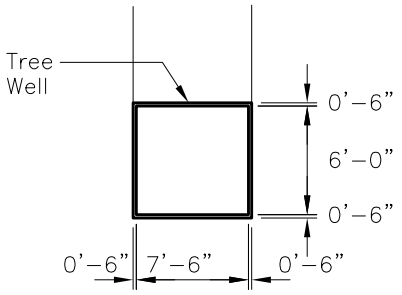
STD PLAN 143

CITY OF LODI

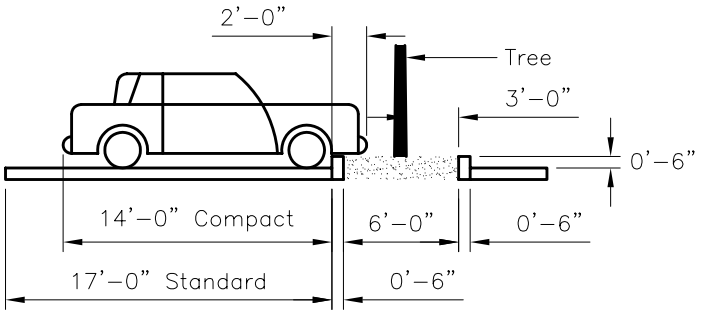
PUBLIC WORKS DEPARTMENT

Parking Lot Planters and Tree Wells





Planter Specification



Poured Curb with Overhang

Notes:

1. Minimum Planter Sizes: A minimum 6'–0" by 6'–0" planting area shall be provided for each tree planted in a tree well or planter strip. A minimum 4'–0" by 8'–0" planting area shall be provided for each tree planted in an island planter. Planter dimensions are measured from the interior side of the curb. (See illustration)

2. Tree must be planted behind the curb at a distance no less than one half the minimum planter width or otherwise recommended by the city's arborist. A 2'–0" foot overhang for vehicles into the planter area is allowed as long as it does not overhang planter width or otherwise recommended by the city's arborist. A 2'–0" foot overhang into the planter area is allowed as long as it does not overhang within the required parking lot setback area or pedestrian walkway.

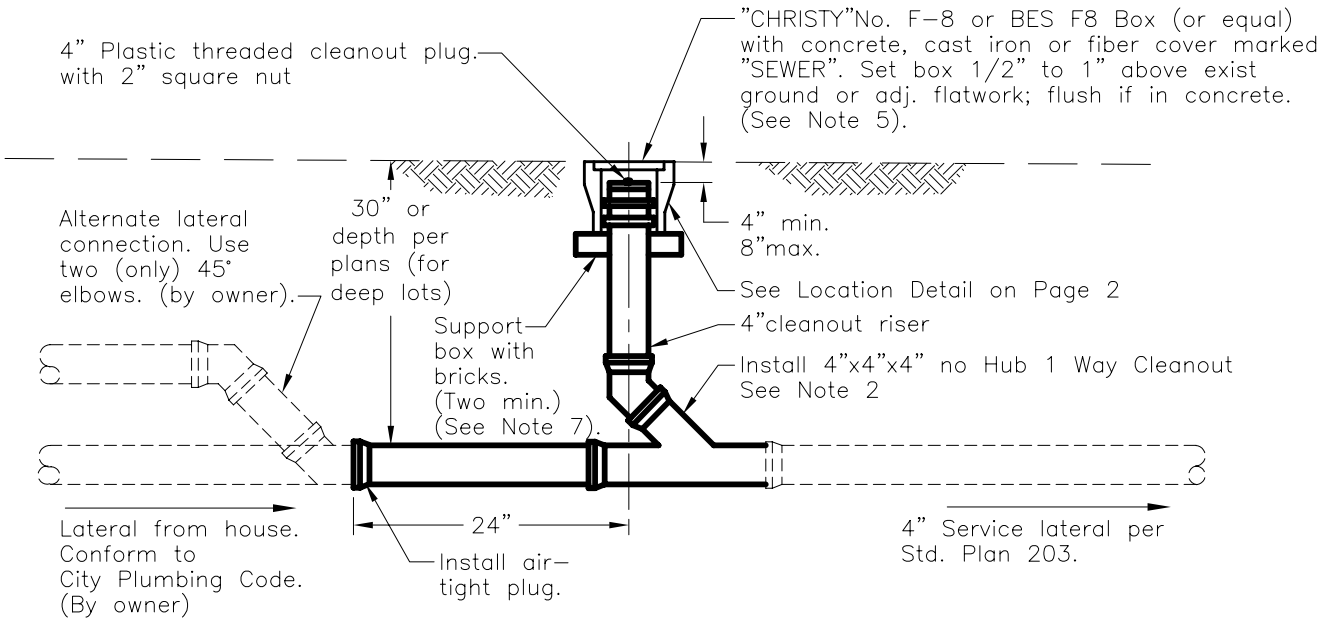
3. Materials: Planters shall contain soil, shrubs and/or living ground cover with 4" of bark mulch. Interlocking pavers and decomposed granite may also be utilized in heavily used areas.

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin City Engineer R.C.E. 39895 — 9/25/02 Date	145
Date 12/00						

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Wastewater Service Cleanout



Notes:

1. Install cleanout on all 4" wastewater services unless otherwise specified.
2. 45° Wye & 45° elbow combination shall be Polyvinyl Chloride (PVC) per ASTM D-3034 SDR 35 or Acrylonitrile-Butadiene-Styrene (ABS) per ASTM D-2751, Cast Iron Soil Pipe (ASTM A74, service unit) or Ductile Iron (ASTM A746) or VCP Wye tee ASTM C-425. See Material List Page 2.
3. Backfill shall conform to Std. Plan 501.
4. Maintenance of lateral shall be per City "Wastewater Lateral Maintenance Policy"
5. In commercial driveways. Use "Christy" G-5 box W/G-5C lid or BES equal; in residential driveways replace concrete lid with cast iron lid.
6. When service is installed with water service, terminate even with the water stub.
7. Support box not needed if set in concrete.

Related Plans: 203, 506

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	MOVED C.O. LOCATION	
Date 12/00				

Approved By: F. Wally Sandelin, City Engineer, R.C.E. 39895 — 9/25/02 Date

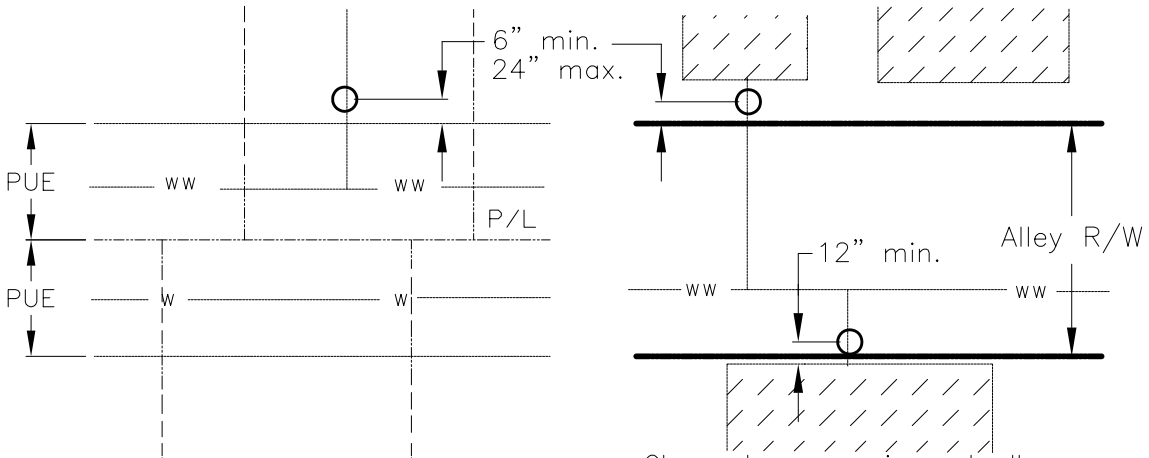
STD PLAN 201

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Wastewater Service Cleanout

LOCATION DETAILS

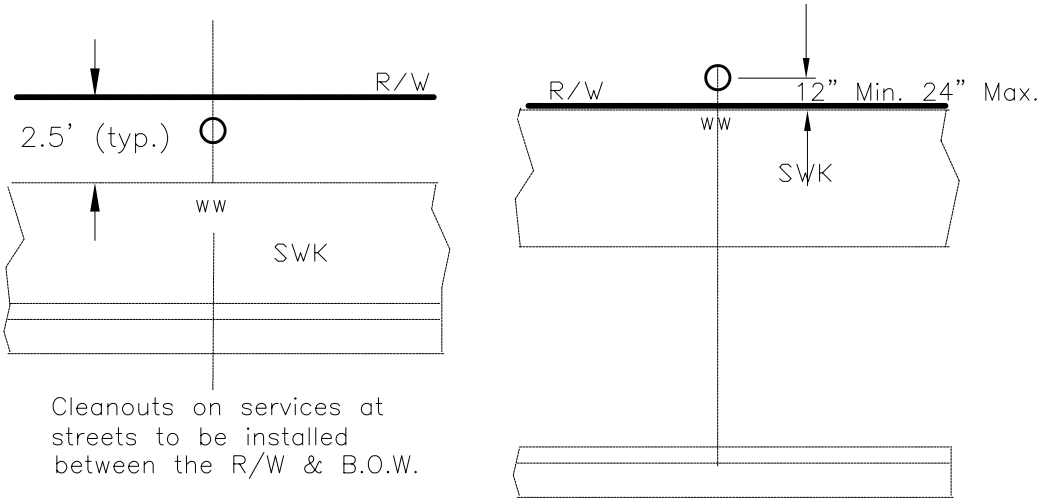


Cleanouts on services at easements installed 6" to 24" outside the easement.

Easement Service

Cleanouts on services at alleys to be installed 6" to 24" outside the alley R/W or 12" within the alley where structures interfere with on-site locations.

Alley Service



Cleanouts on services at streets to be installed between the R/W & B.O.W.

Street Service

Material List for STD PLN 201
City Approved 1-Way Cleanouts (a)

GPK Products Inc.	Solvent Weld SCH 40 DWV
Mueller Industries, Inc.	TY Long Turn

(a) or approved equal

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	MOVED C.O. LOCATION	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

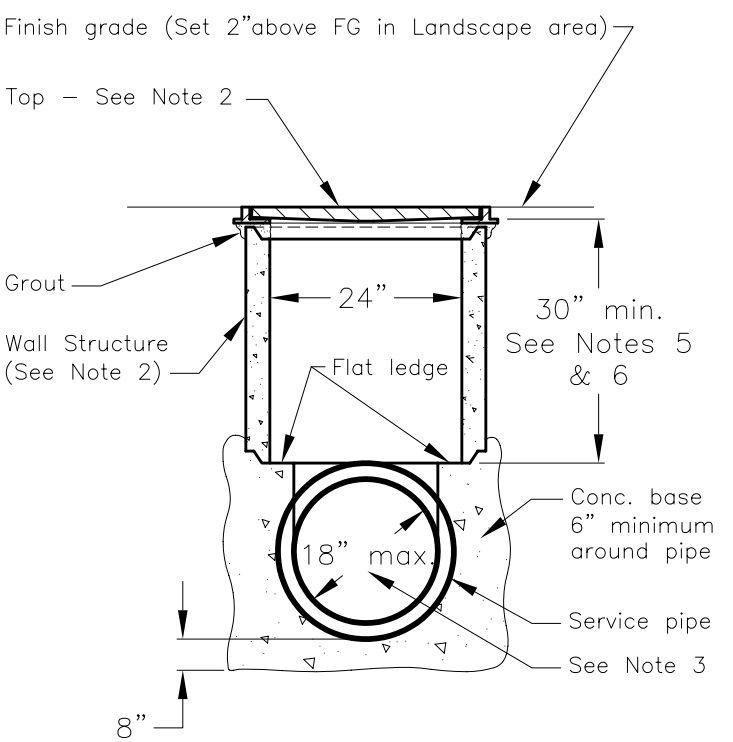
9/25/02
Date

STD PLAN
201

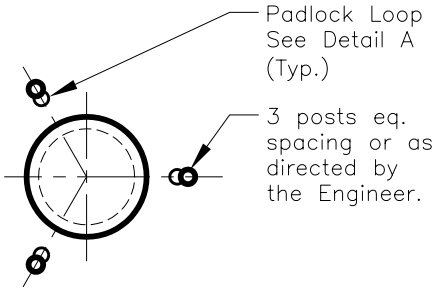
CITY OF LODI

PUBLIC WORKS DEPARTMENT

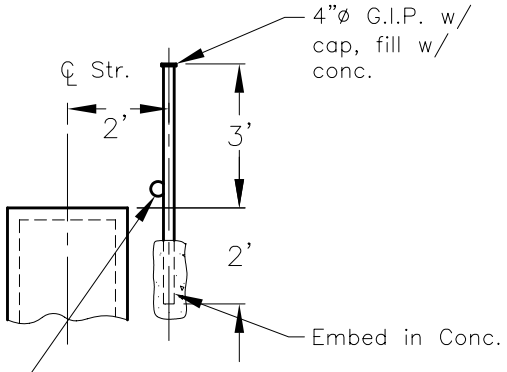
Monitoring Structure



Section



Bollard Location Detail



Detail A

Notes:

1. Monitoring structures shall be installed on storm and wastewater services when required by the Engineer or as shown on the plans. Normal location is between the back of sidewalk and the R/W.
2. Construction guidelines:

Location	Wall	Top
Traffic Area	Precast conc. per ASTM C–478 or 6" CIP conc.	Frame & Cover per Std Plan 309
Landscape Area	Precast pipe – VCP, RCP or CP	Expandable Plug

3. For services over 18"ø, consult Engineering Division.
4. Monitoring structure to be privately owned and maintained.
5. Where 30" min. depth cannot be maintain, the structure shall be located behind the sidewalk and be installed with padlock loop per Detail A.
6. Posts required when structure is less than 30" and is located in a traffic area.
7. For trench backfill requirements, See Std. Pln 501.

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Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

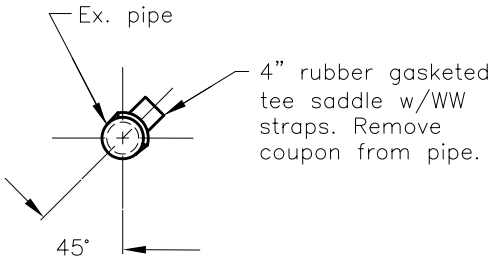
STD PLAN

202

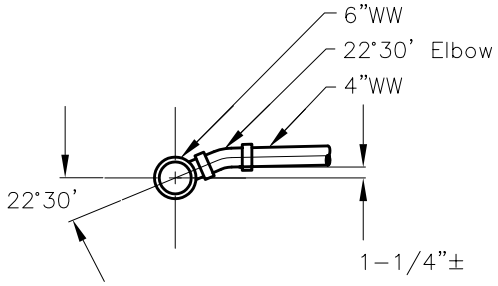
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Wastewater Service

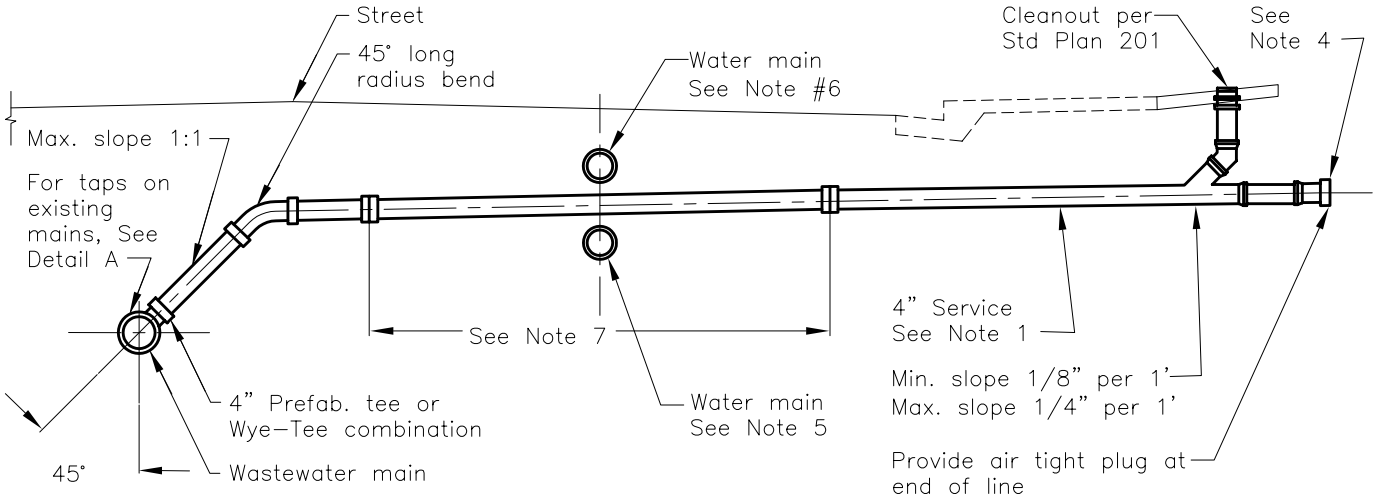


Detail A



Alt. Detail

(To be used only w/ approval of Engineer on shallow mains)



Section

Notes:

1. Pipe shall be Vitrified Clay Pipe per ASTM C-700 with compression joint per ASTM C-425 or compression coupling per ASTM C-594; Polyvinyl Chloride Pipe per ASTM D-3034 SDR 35; or Ductile Iron Class 50 with Compression Joint and Rubber Ring per ASTM D 1869. 6" and larger services per plans and waste water main standards.
2. Backfill shall conform to Std. Plan 501.
3. Taps on existing mains shall be made by the Contractor per Detail A when shown on the plans or approved by the Engineer.
4. When service is installed with water service, terminate even with the water stub.
5. Where service crosses over WM, 4" min. clearance and special construction are required (See Note 7)
6. Where service crosses under WM with less than 12" clearance, 4" clearance and special construction are required. (See Note 7)
7. Special construction: center length of pipe on water main. Short stick clay pipe not allowed. When service constructed under this condition (See Note 1)

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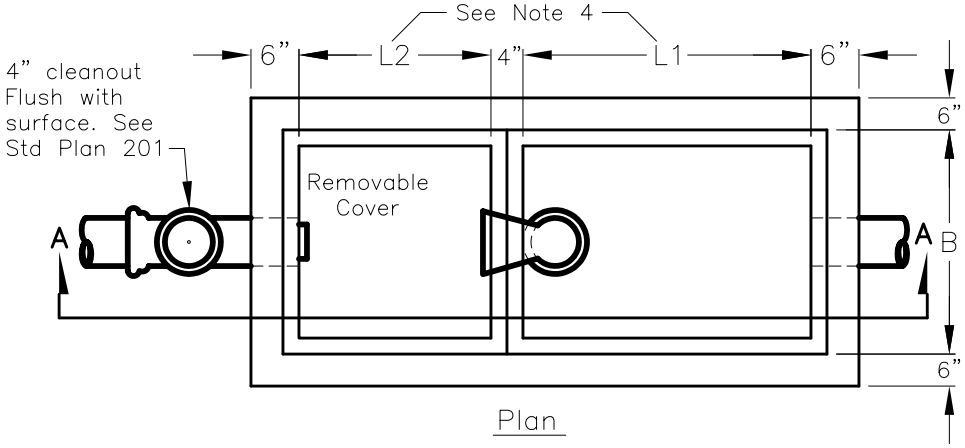
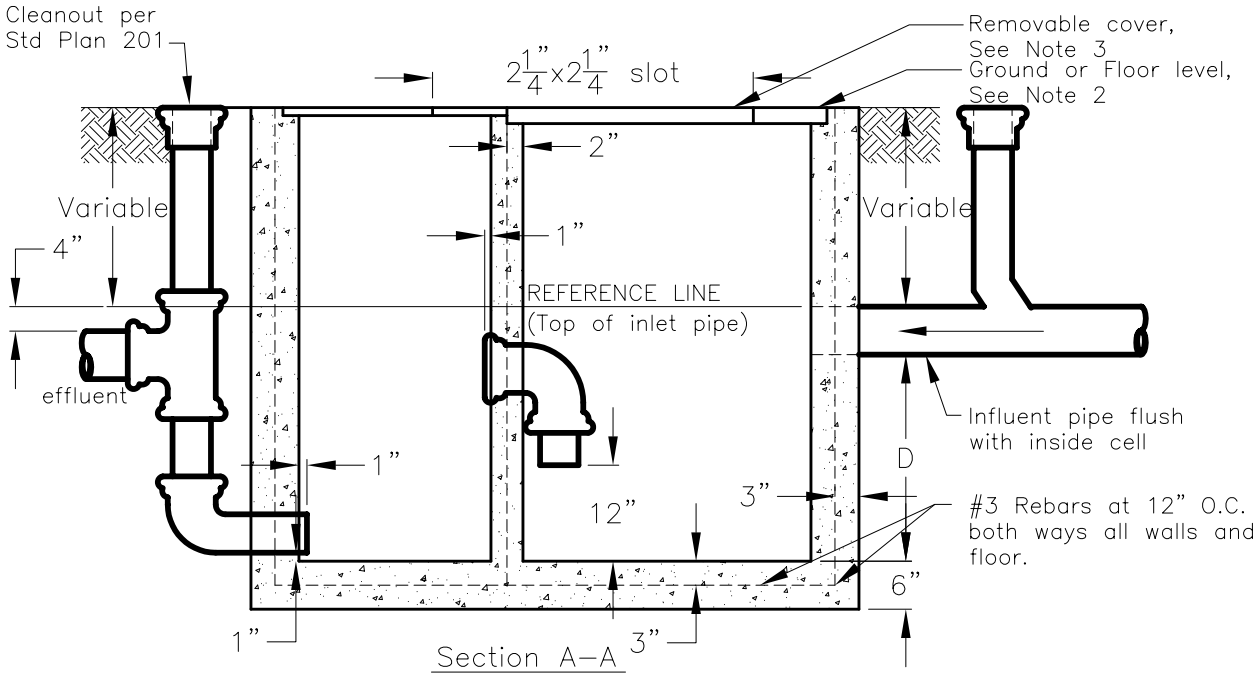
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Wastewater Interceptor



Plan



Section A–A

Notes:

1. Precast commercial units are acceptable with prior approval.
2. Waste Interceptor shall not be located in heavy traffic areas. Interceptor shall be installed at ground surface elevation higher than all storm sewer inlet elevations on the property.
3. Removable cover design shall be dictated by strength and location requirements as determined by the installer, but shall be of such a design to provide convenient access to each entire compartment for cleaning. The cover may be sectional, but shall be of solid design, essentially waterproof, installed at or near ground or floor level and kept clear of all obstructions so as to be readily accessible for cleaning and inspection.
4. For flows over 165 gpm the capacity of interceptor required for waste shall be individually determined by Public Works Department.
5. Waste Interceptor to be outside any fencing and subject to inspection at all times.

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F. Wally Sandelin
City Engineer
R.C.E. 39895

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Date

STD PLAN
204

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Waste Interceptor

Peak flow into interceptor (GPM)	Inches			
	B	D	L1	L2
0–67	24	30	36	24
67–112	30	30	48	30
112–165	36	36	60	36

Over 165 GPM, See Note 4

Note:

Total rated discharge capacity of all fixtures, equipment or appliances discharging into interceptor in accordance with uniform plumbing code or actual flow rate.

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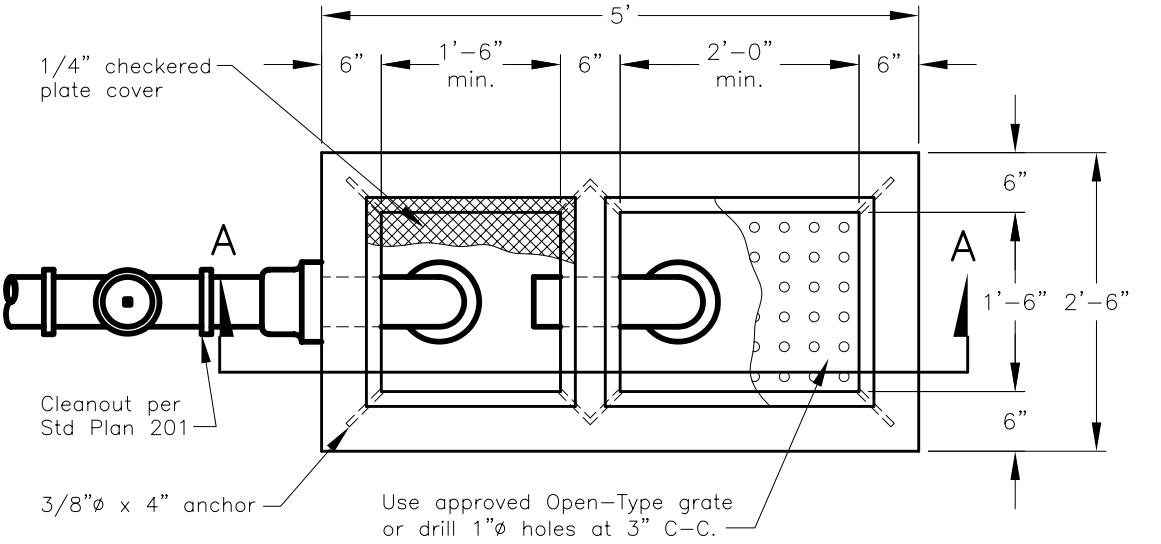
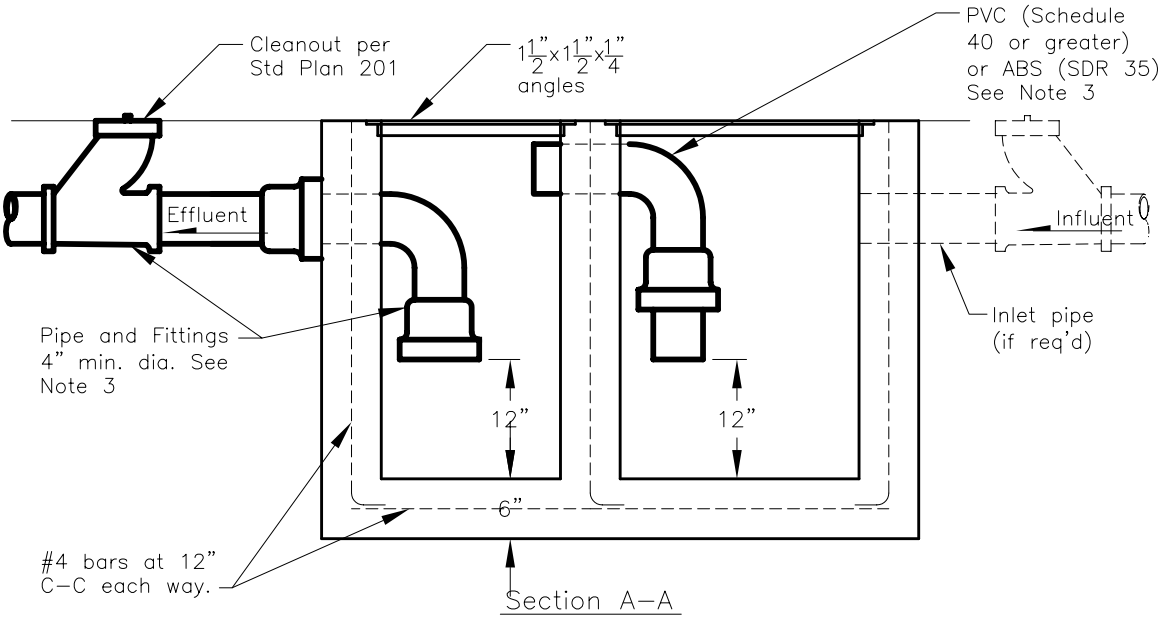
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Sand/Oil Trap



Plan



Section A-A

Notes:

1. All exposed steel to be galvanized after fabrication.
2. Precast commercial units are acceptable with prior approval.
3. For petrochemical applications cast iron fittings and piping shall be used.
4. Floor to drain to open grate or drilled plate cover.

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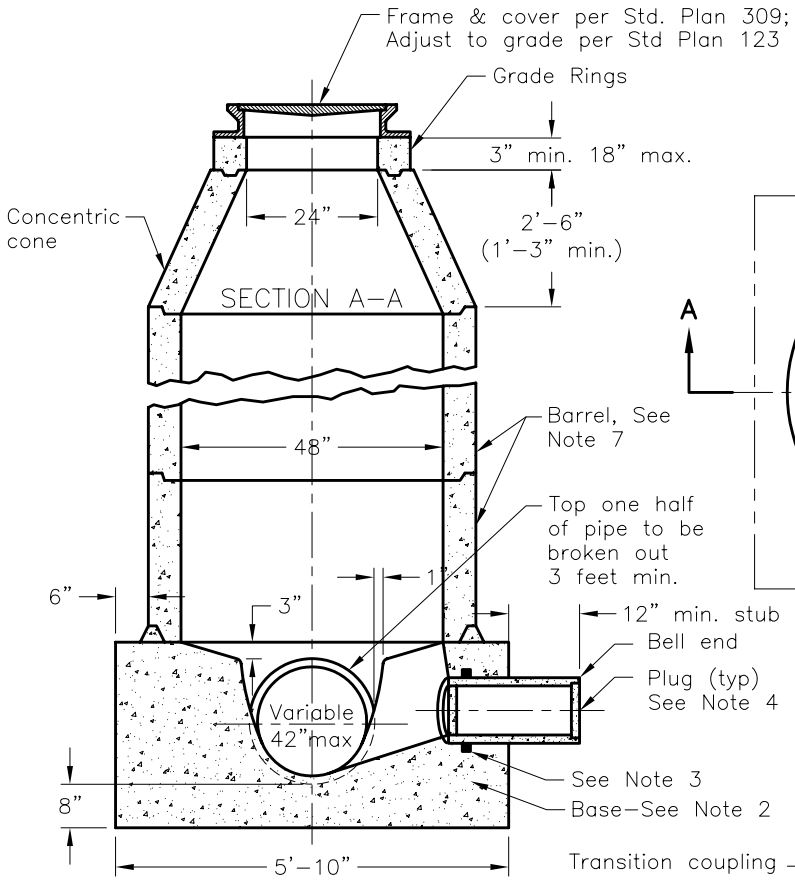
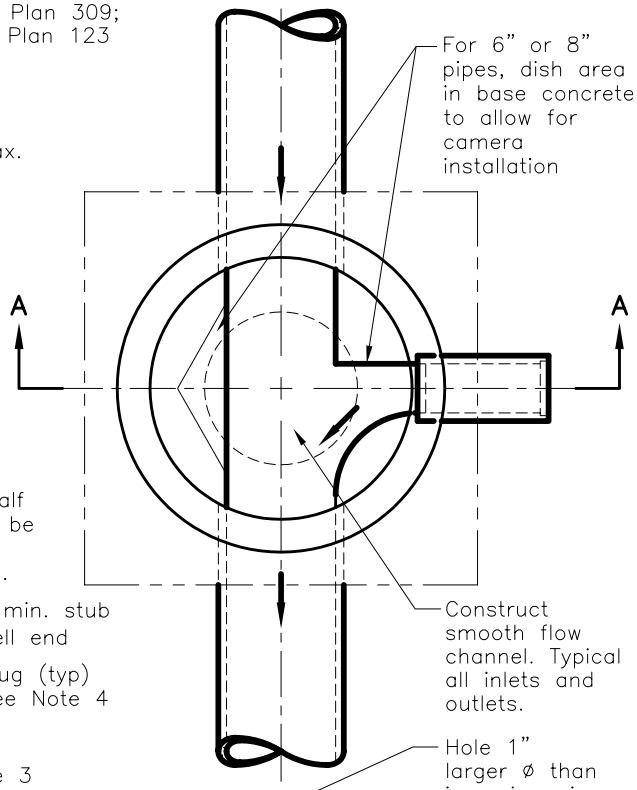
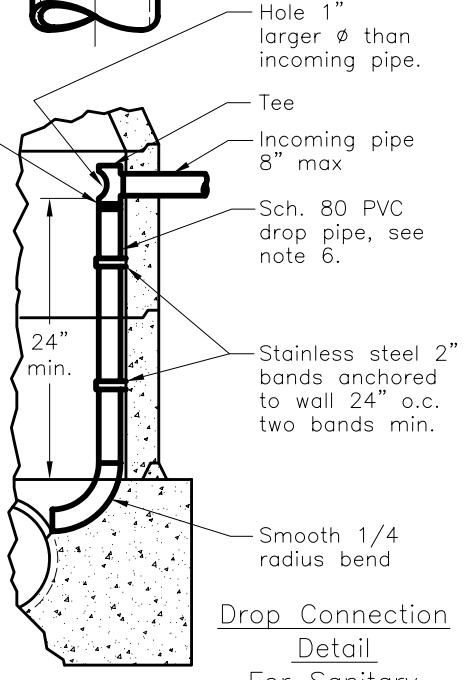
CITY OF LODI

PUBLIC WORKS DEPARTMENT

48" Manhole







Drop Connection Detail
For Sanitary Sewer only

Notes:

1. Barrel, cone and grade ring sections shall conform to ASTM C478, latest revision. Manufacturer to be approved by the engineer.
2. Base shall consist of cast-in-place Class B concrete per Sec. 90 Caltrans Std Specification. Prefabricated bases shall conform to Note 1 and be placed on 4" of concrete or 3/4" Class II AB Bedding.
3. Rubber ring waterstop or manhole adapter required for PVC pipe installations.
4. Plugs shall be compression type as approved by the Engineer.
5. Backfill around MH shall be compacted to 95% R.C. min.
6. Drop connection to be used only when shown on the plans or approved by the Engineer. Drop pipe to be one size larger than the incoming pipe.
7. All barrel joints shall be grouted inside and outside or sealed Ram-nek or approved equivalent.

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Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

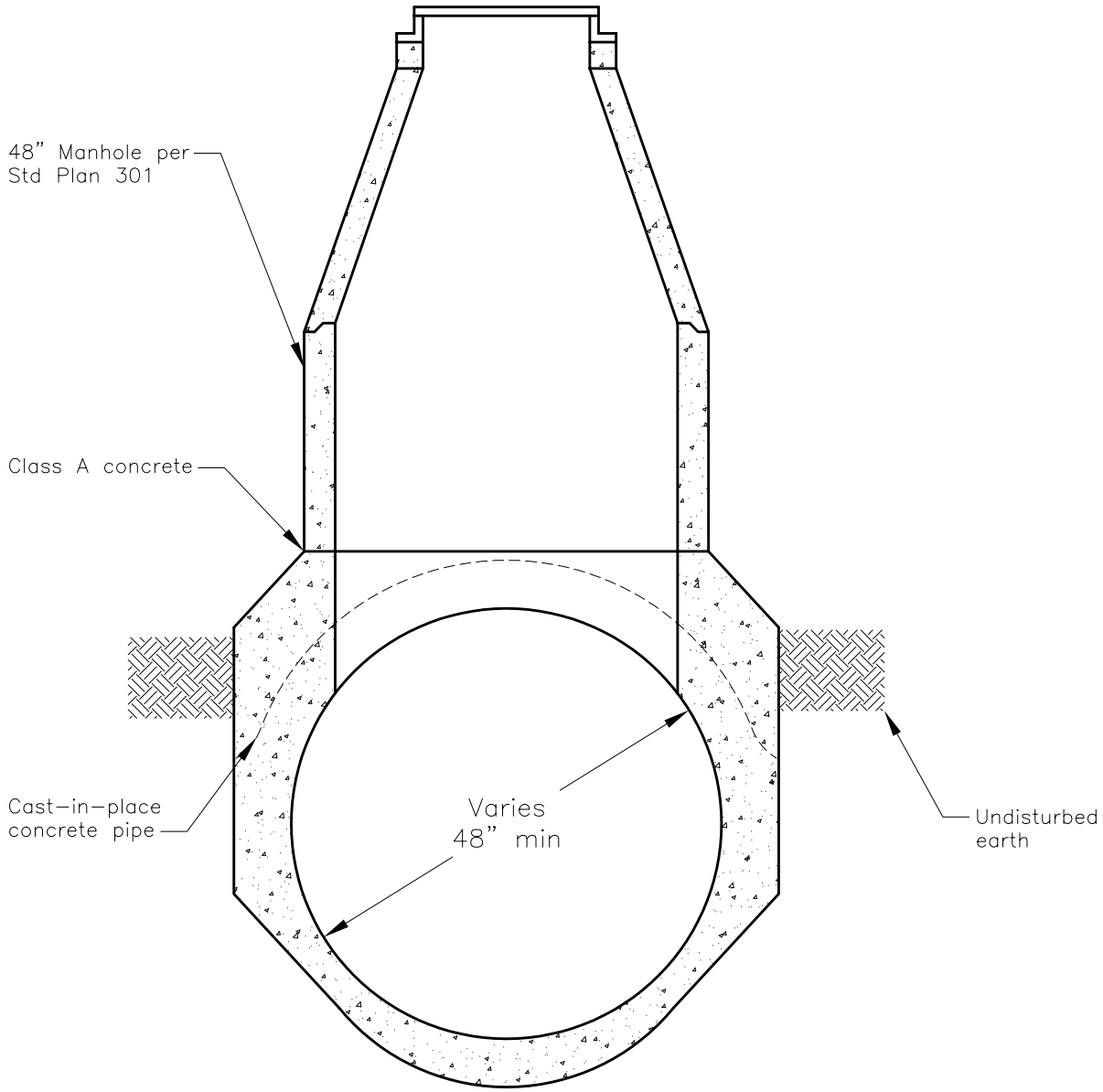
12/28/00
Date

STD PLAN
301

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Saddle Manhole



Notes:

1. Make manhole opening in top of pipe before concrete sets and place barrel within following 7 days.
2. Grout all joints.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
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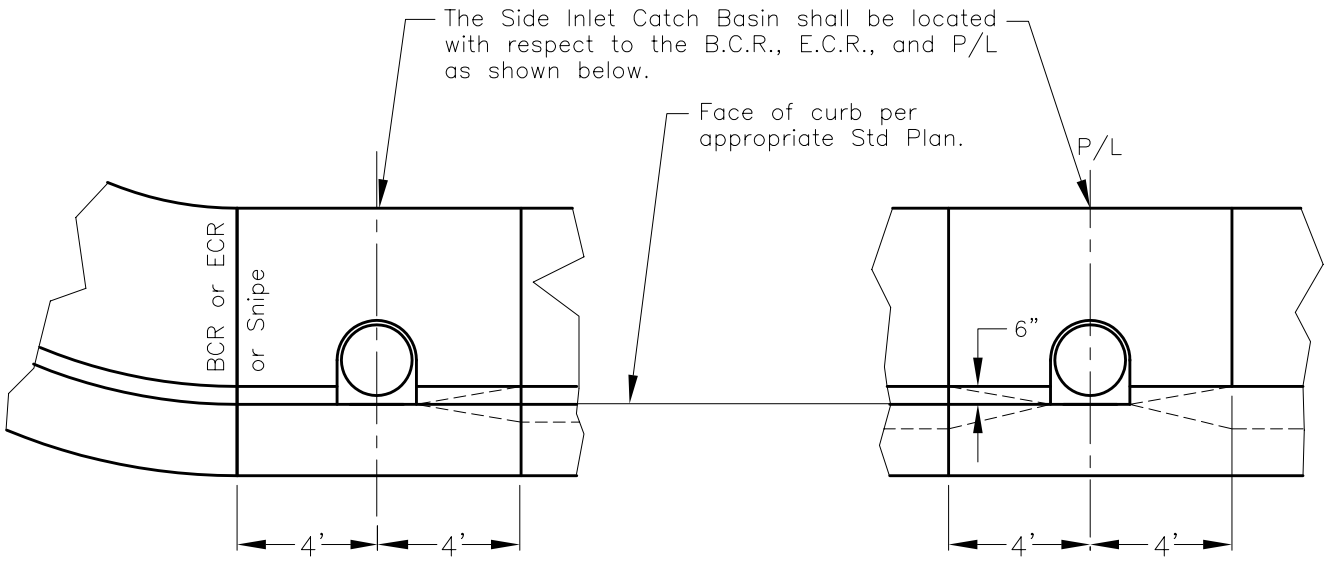
12/28/00
Date

STD PLAN 302

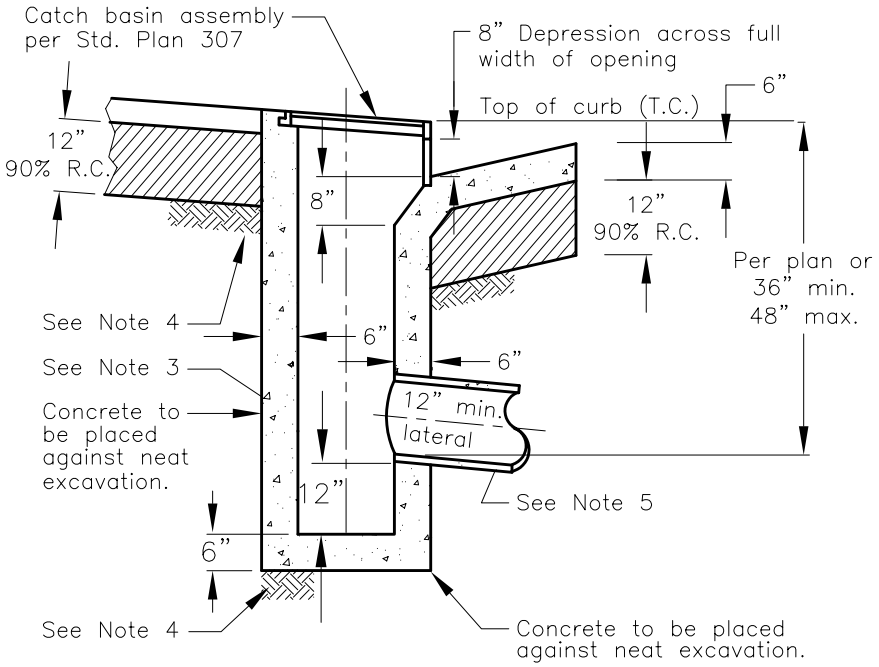
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Side Inlet Catch Basin



Flowline and curb transition (typ.)



Notes:

1. The concrete shall conform to following criteria.
   A. 2500 P.S.I. at 28 days.
   B. 1 1/2" maximum aggregate.
   C. 4" slump at placing site.
   D. Light broom finish.
   E. Impervious membrane cure.
2. When catch basin is to be constructed with stub, the stub shall extend beyond the toe of the curb & gutter and plugged with precast plug.
3. Barrel may be constructed with 18" R.C.P. and grouted smooth.
4. Recompact over–excavated areas to 92% R.C.
5. Lateral line must be ductile iron pipe when cover is 2' or less.
6. For trench backfill requirements See Std. Pln 501.

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Ch. WS	1	7/01	Update per first revision	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
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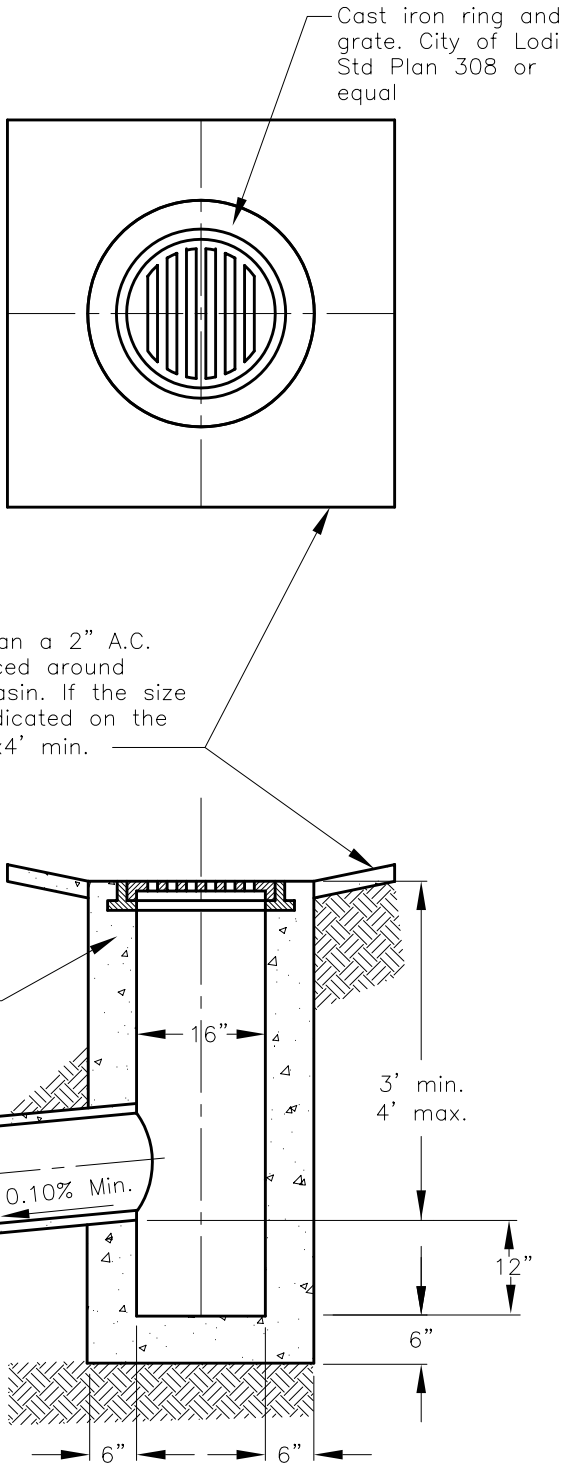
STD PLAN
303

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Drop Inlet Catch Basin



Notes:

1. Conc. 2500 psi at 28 days
   1 1/2" max. agg.
   4" slump at placing site.
   Light broom finish.
   Impervious membrane cure.
2. For trench backfill requirements see Std Plan 501.
3. For 24" catch basin, use Std Plan 310 with slotted cover.
4. Alternate construction–use 18" RCP, grout all openings and voids smooth.

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F. Wally Sandelin
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R.C.E. 39895

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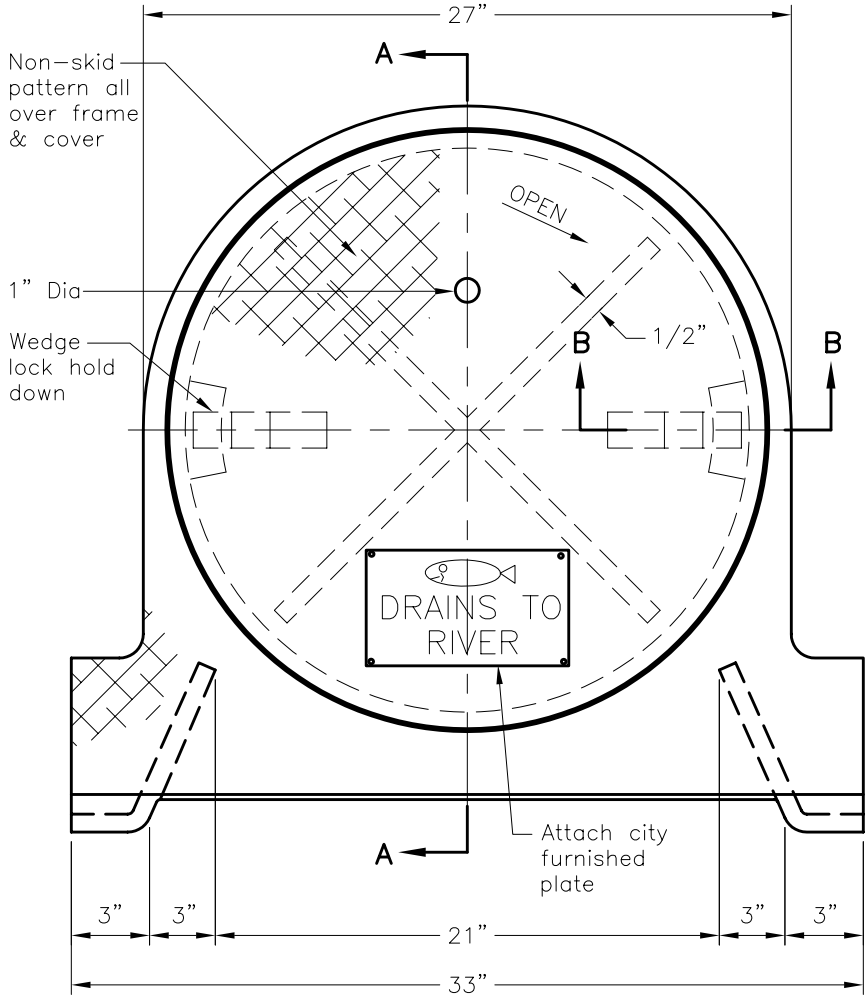
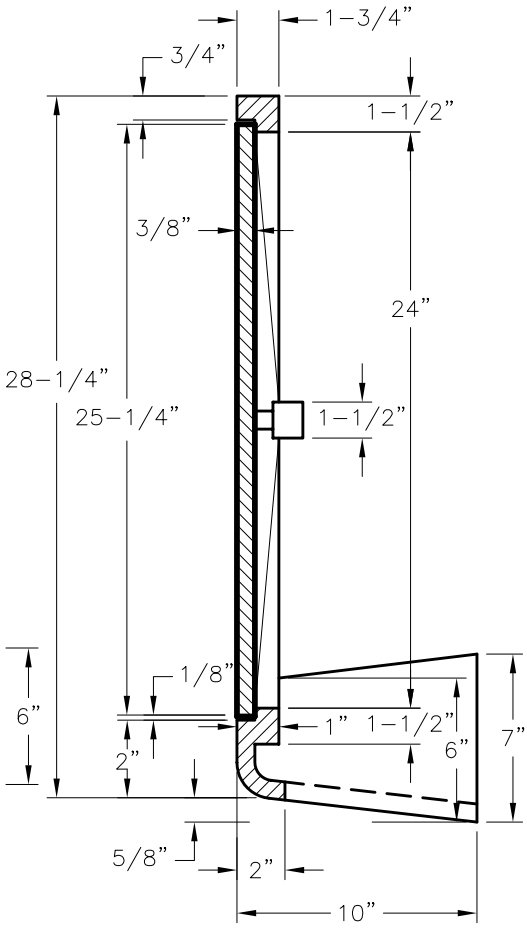
STD PLAN
304

CITY OF LODI

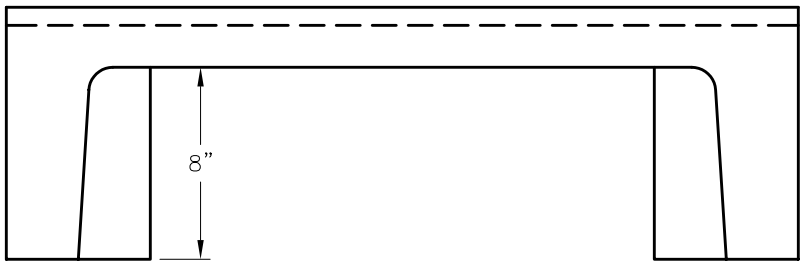
PUBLIC WORKS DEPARTMENT

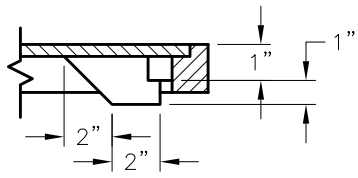
Catch Basin Assembly
Curb Inlet Sidewalk Type





Section A–A





Section B–B

Notes:

1. California Concrete Pipe A–434, Catch Basin Assembly or equal.
2. Approx. Wt. 160 Lbs.
3. Material – Cast Iron.

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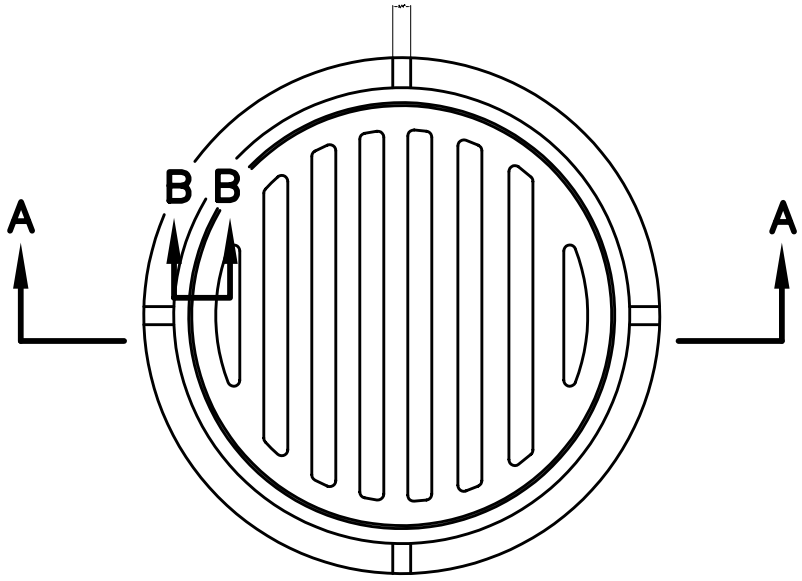
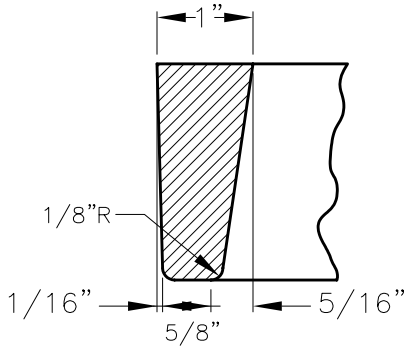
CITY OF LODI

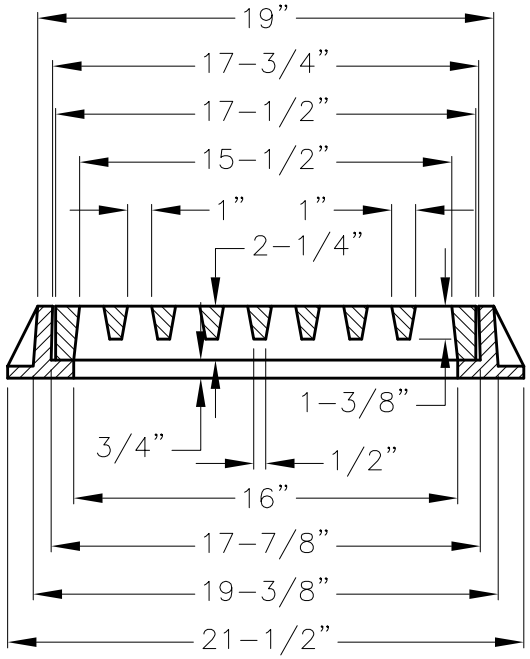
PUBLIC WORKS DEPARTMENT

Drop Inlet Catch Basin Assembly





Section B–B



Section A–A

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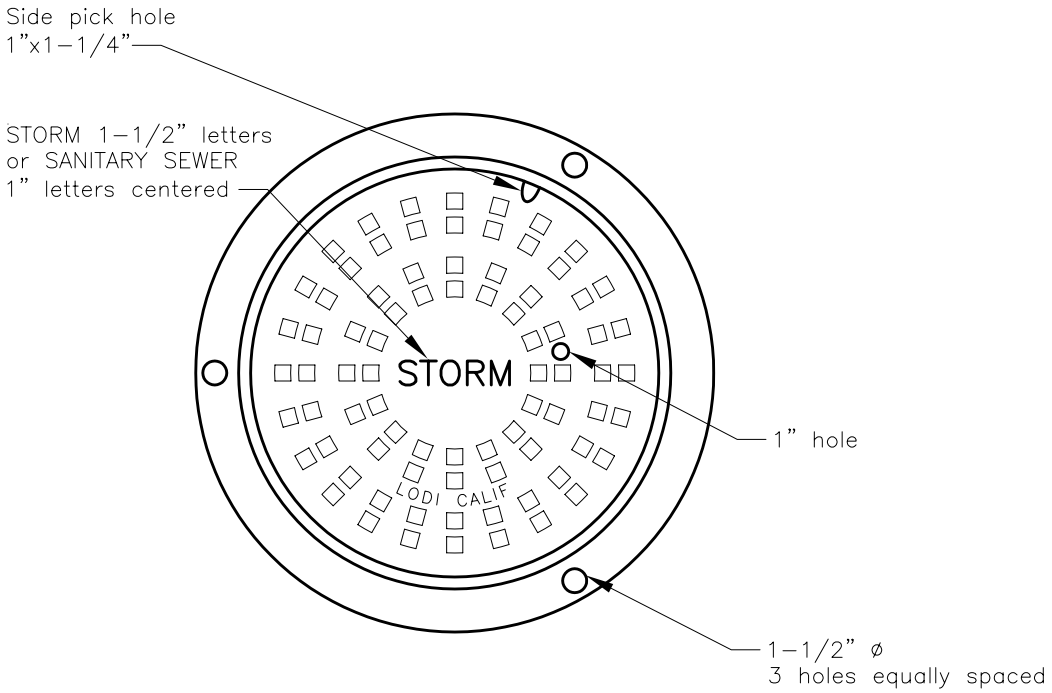
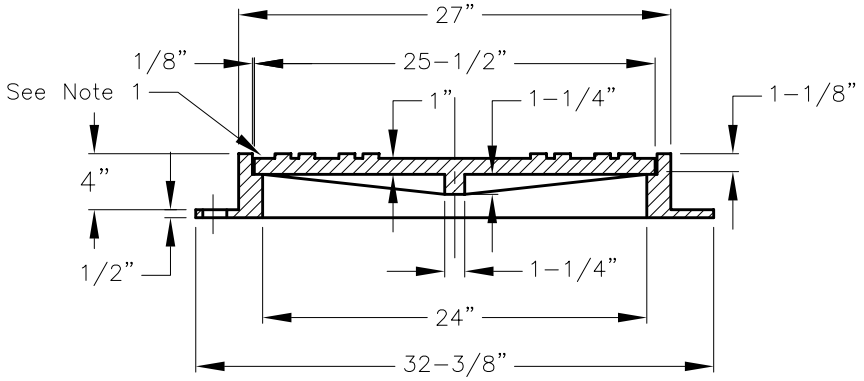
Ch. WS					F. Wally Sandelin 12/28/00	308
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Manhole Assembly (24")





Notes:

1. Frame–Approx. wt. 140 lbs.
2. Cover–Approx. wt. 136 lbs.
3. Manhole cover shall be marked "STORM" or "SANITARY SEWER" as appropriate.
4. Material–Cast Iron per ASTM A-48 Class 30
5. See Std. Plan 123 for adjustment to grade.

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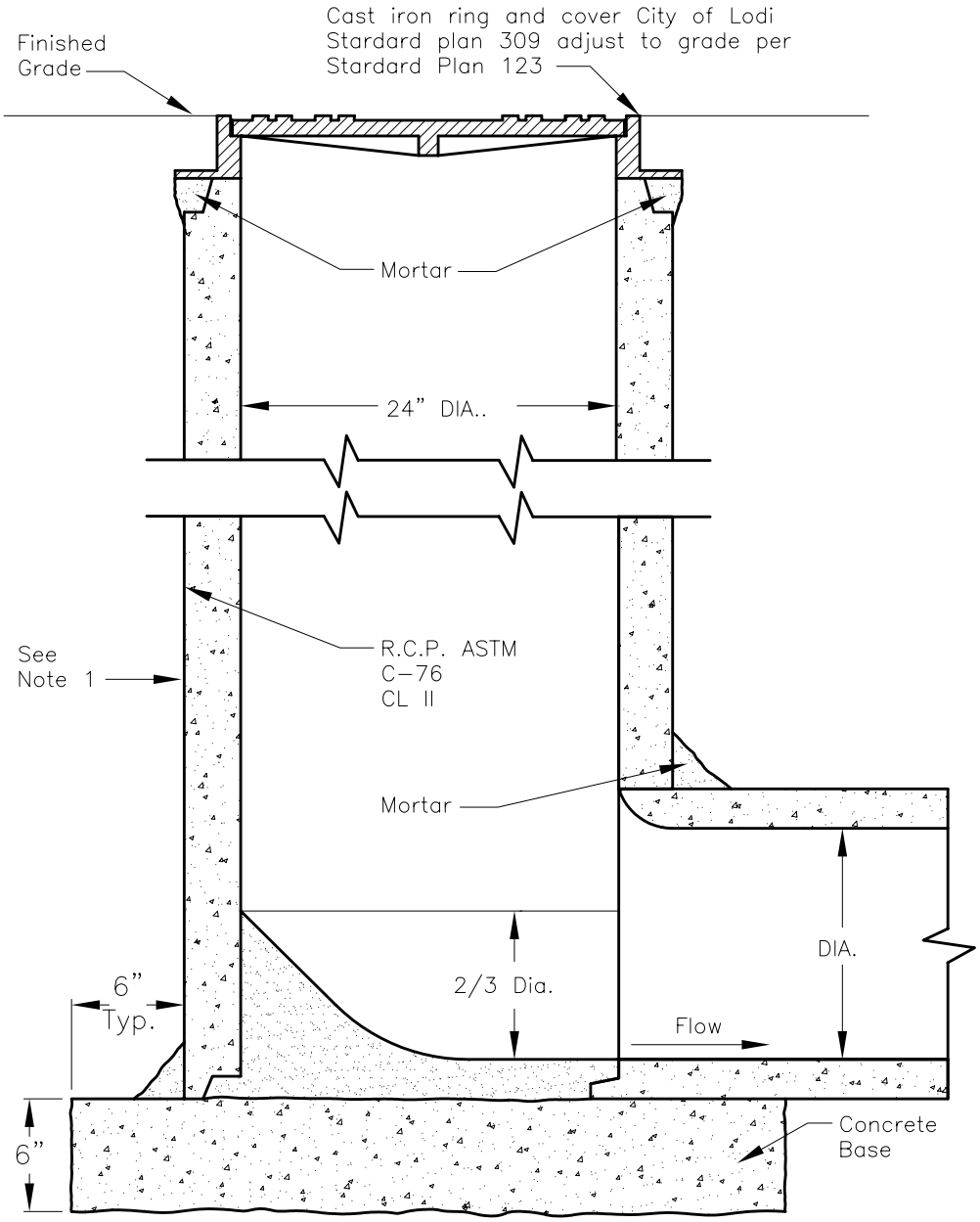
CITY OF LODI

PUBLIC WORKS DEPARTMENT

24" Riser



Notes:

1. Backfill around riser shall be a minimum of 92% R.C.
2. Concrete:
   A. 2500 psi @ 28 days
   B. 4' slump maximum.
   C. Class B per Section 90 of Standard Specifications. 1-1/2" max. agg.
3. For depth over 60", use 48" manhole, Standard Plan 301.
4. For trench backfill requirements, See Standard Plan 501.

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Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

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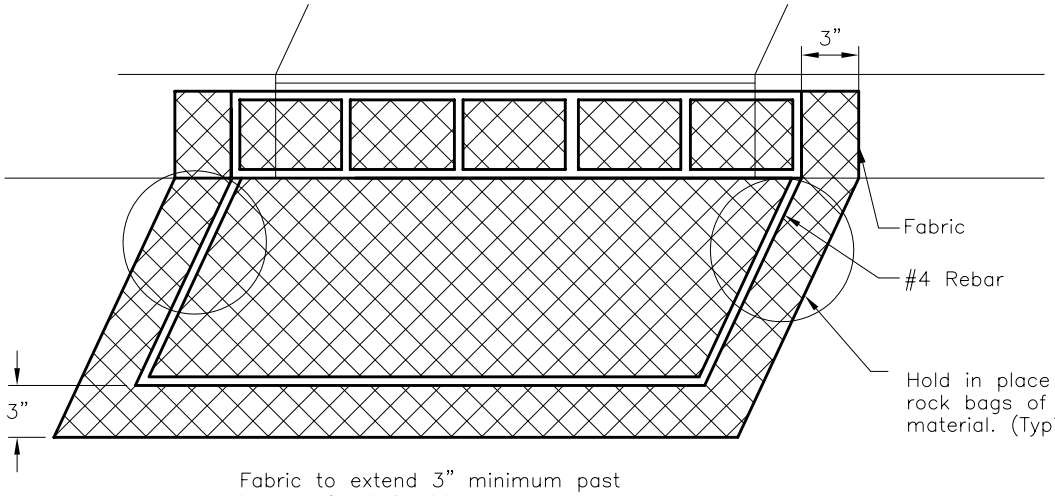
Date

STD PLAN
310

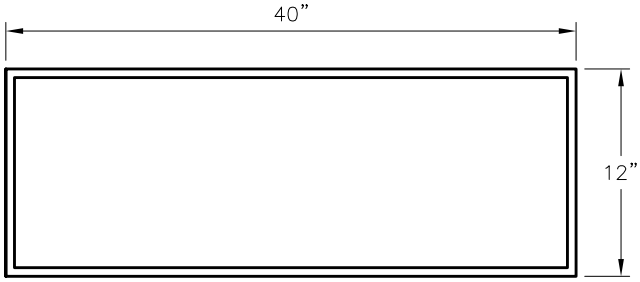
CITY OF LODI

PUBLIC WORKS DEPARTMENT

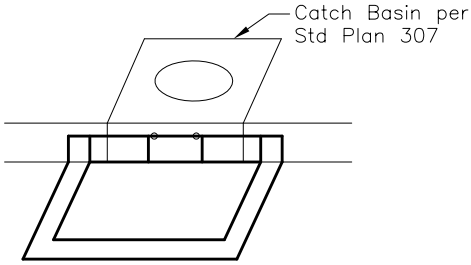
Construction Catch Basin Filter

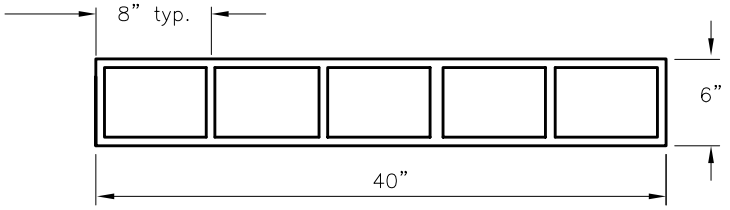


Fabric to extend 3" minimum past bar on front & sides.

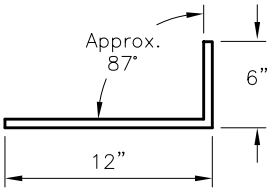


Top





Front



Side

Notes:

1. Will be maintained weekly and/ or after every storm.

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F. Wally Sandelin
City Engineer
R.C.E. 39895

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Date

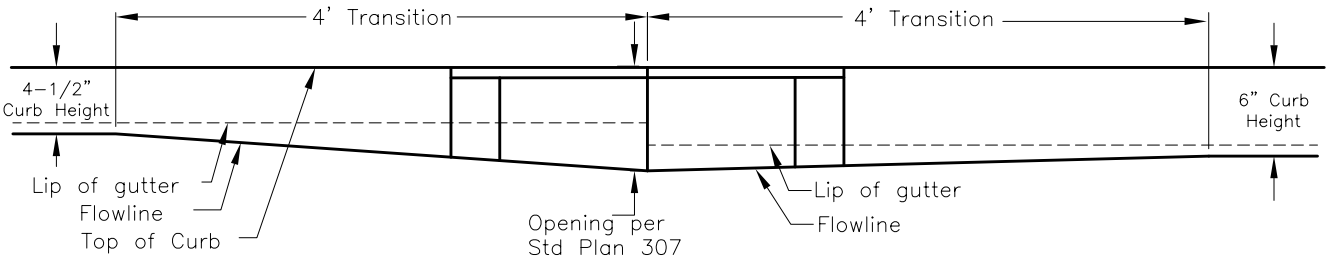
STD PLAN

313

CITY OF LODI

PUBLIC WORKS DEPARTMENT

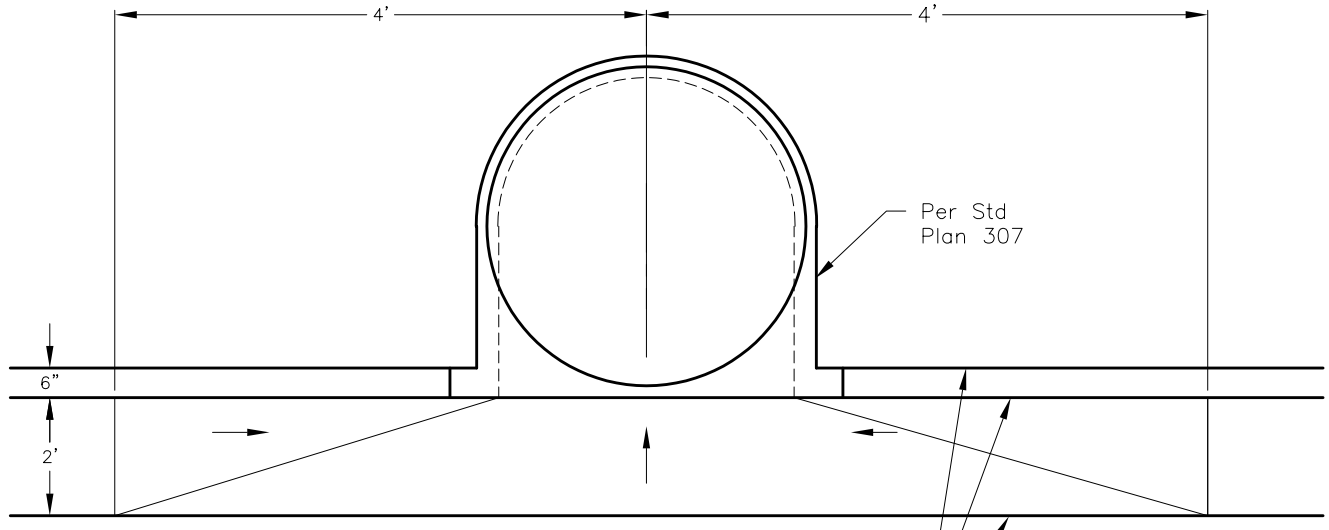
Gutter Transition Detail



Left side for 4–1/2" Curb Height

Gutter Transition Detail

Right side for 6" Curb Height



Plan View

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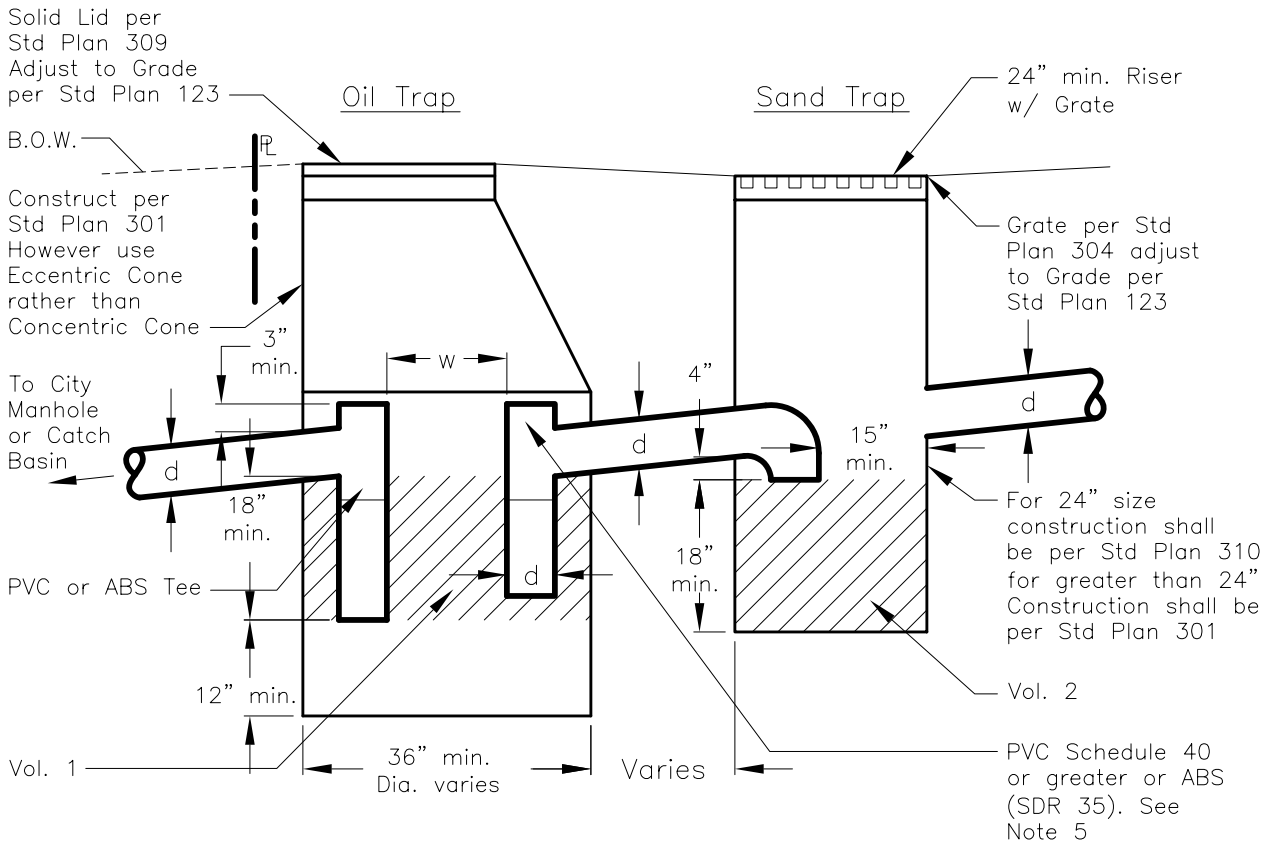
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Sand/Oil Trap



Drainage Area (s.f.) (Excluding Landscaping)	Vol. 1 cu. ft.	d	w	Vol. 2 Combined all C.B.'S cu.ft.
0 – 20,000	3	6"	12"	Drainage Area ÷ 4000
20,000 – 40,000	6	8"	16"	
40,000 – 100,000	10	10"	20"	
100,000 – 220,000	12	12"	24"	

Notes:

1. Precast commercial units are acceptable with prior approval.
2. Oil Trap to be outside of fencing and subject to inspection at all times.
3. Larger sizes may be required based on generation of oil and/ or sand (i..e. Bulk oil facilities, Trucking firms)
4. For lower flows Standard Plan 205 can be used with City approval.
5. For petrochemical applications Cast Iron fittings and piping will be used.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

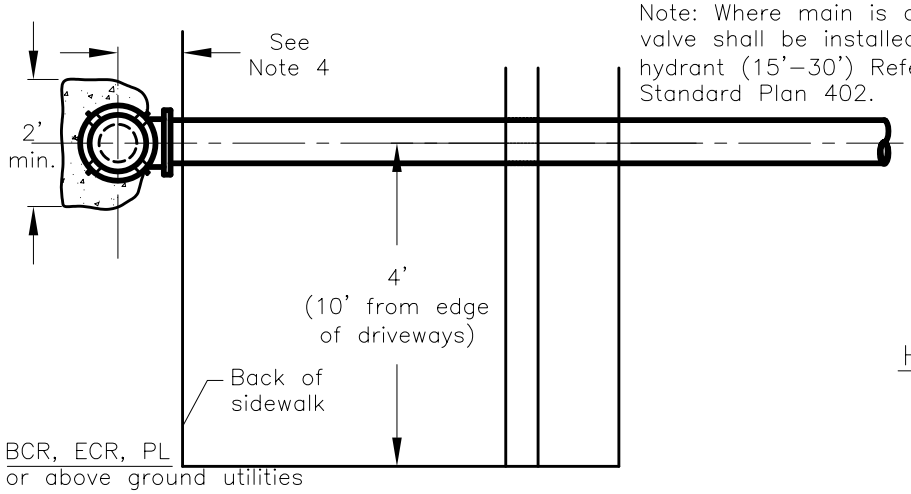
STD PLAN 315

CITY OF LODI

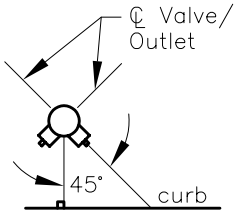
PUBLIC WORKS DEPARTMENT

Fire Hydrant Installation

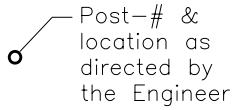
Note: Where main is over 150' from hydrant a second valve shall be installed in-line in the vicinity of the hydrant (15'-30') Refer to water valve installation Standard Plan 402.

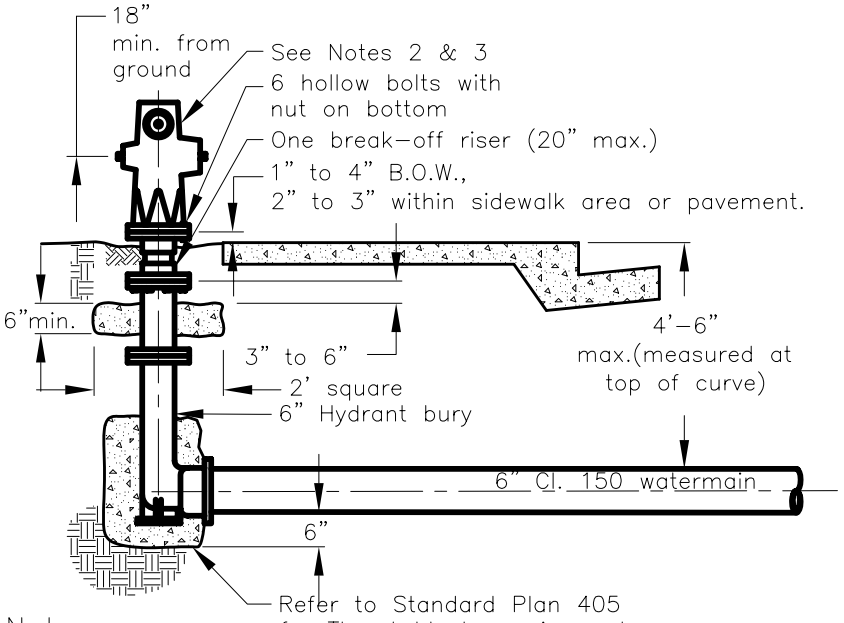


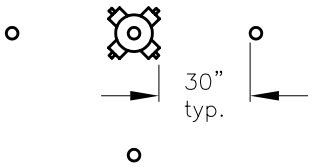
BCR, ECR, PL
or above ground utilities



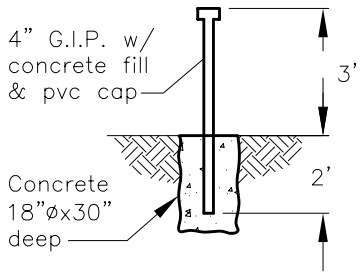
Hydrant Orientation







Guard Post Location Detail



Guard Post Construction Detail
See Note #5

Notes:

1. All work and material shall conform to City of Lodi Construction Specifications.
2. Hydrants shall be painted Federal Yellow at the factory and furnished with National Standard Hose Thread outlets and cast iron caps.
3. All Hydrants 1 4-1/2" outlet & 1 2-1/2" outlet; with fusion epoxy coated interior. Long Beach 425; Clow 950; AVK 2440; Jones 4040.
4. Locate C/L of hydrant per the following:
   1.5' behind walk where F.O.C. to B.O.W. distance is 7.0' or less.
   2.5' behind F.O.C. where F.O.C. to B.O.W. distance is greater than 7.0'
   5' behind F.O.C. in planters.
5. Install guard posts where hydrants are installed in paved areas accessible to traffic or in planters where hydrant is less than 3' behind the curb or when directed by the City.
6. For trench backfill requirement, See Standard Plan 501.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADJUSTED DIMENSION FROM PL	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

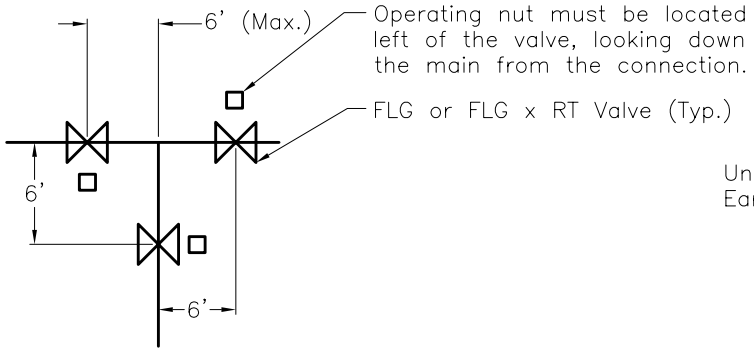
9/25/02
Date

STD PLAN
401

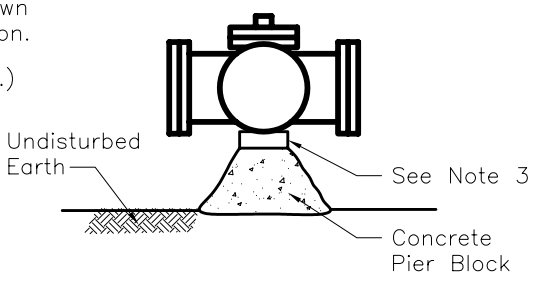
CITY OF LODI

PUBLIC WORKS DEPARTMENT

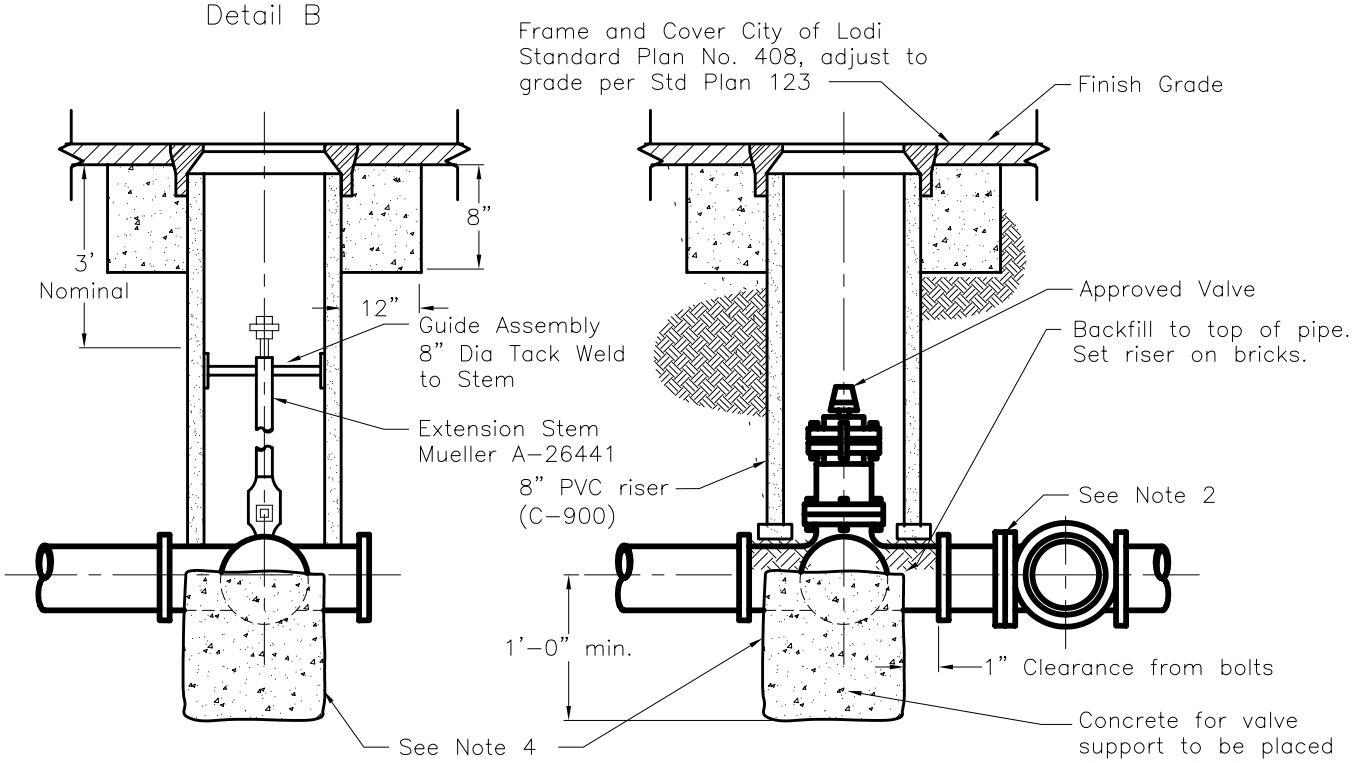
Water Valve Installation



Flanged Installation
Detail B



Hot Tap Valve Support
Detail C



Extension Stem Detail A
See Note 1

Notes:

1. Install extension stem when distance from valve cover to operating nut is greater than 12 feet; 3' max. nominal cover per Detail A.
2. Flanged fittings shall be used where lines are to be extended at a later date or as shown on the improvement plans. Operating nuts on flanged valves must be arranged per Detail B.
3. Concrete blocks may be used for valve and riser support; thrust blocks per Standard Plan 405. For Hot Tap Valve support refer to Detail C.
4. Place Visqueen around valves before placement of concrete supports.
5. For trench backfill, See Standard Plan 501.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:
F. Wally Sandelin
City Engineer
R.C.E. 39895
12/28/00
Date

STD PLAN
402

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water Valve Installation Materials List

All Water Valves & Materials shall be Class 150B with 2" square operating nuts, open left (clockwise to close) and shall conform to AWWA Standard C–504 for Rubber Seated Butterfly Valves and City of Lodi Construction Specs 6–7602.

AWWA Approved Valves:

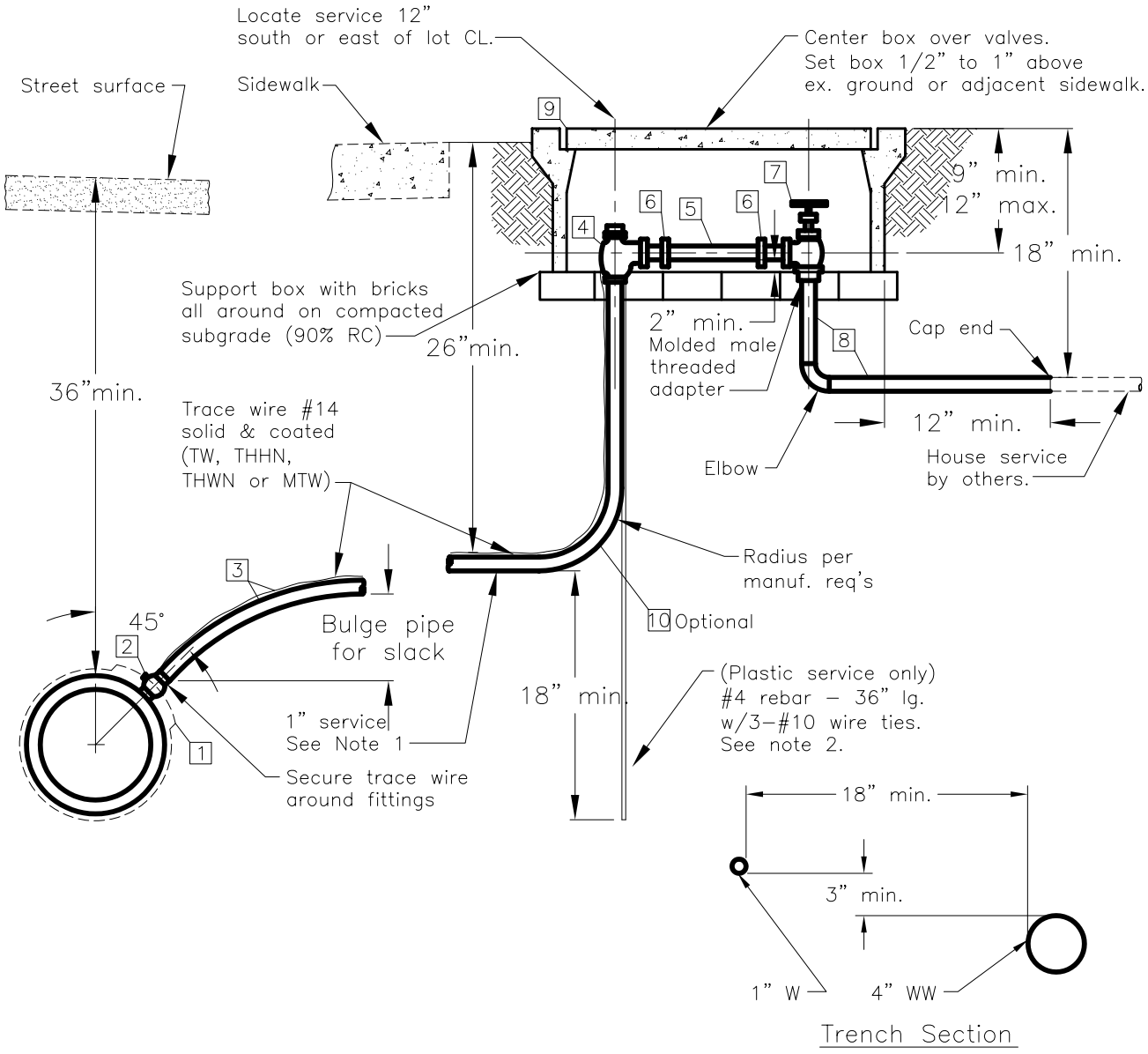
- Mueller RS and Butterfly
- M+H/Clow/Kennedy RS and Butterfly
- American Darling RS Gate valves
- Waterous RS Gate valve
- AVK RS Gate valves

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	402
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

1" Water Service



Notes:

1. Maintain 24" clearance between tap and any coupling, fitting or adjacent tap. Plastic services shall be looped approximately 6" vertically or laterally to provide slack in the line. If the service is installed in the same trench as the sanitary service, the water service shall be installed without splices and the trench section shown applies.
2. Backfill shall conform to Std. Plan 501.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED SECOND ITEM #6 & MADE ITEM #10 OPTIONAL	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

STD PLAN 403

CITY OF LODI

PUBLIC WORKS DEPARTMENT

1" Water Service Materials List

Fitting (a.)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Saddles [1]	1"	For C1–AC & Ductile Iron Pipe Ductile Iron Double Strap Saddle No Single Strap Saddles		IPT	Rockwell 313 Apac 102 Other manufacturers with similar designs o.k.
Saddles	1"	For C900 Pipe		IPT	Romac 101S Mueller H1349
Corp. Stop [2]	1"	Ground Key or ball valve	1" cc threads for C1 AC pipe	1" CTS PE Mueller Instatite	Mueller H–15006 or Mueller H–1500 with H15074 J1500 1" with H15074 1" F600 Ford with H15074
Corp. Stop	1"	Ground Key or ball valve	Saddle C1 AC C–900 Pipe 1" IPT	1" PJ for PE CTS	All PJ must have inserts 1" Ford FB1100 with Ins. #52 1" J–3403 with Insert J2805 1" Mueller H15028 with insert H504385 1" FB500 with C14–44 adapter with insert J41 with J2607 adapter with insert
Corp. Stop	1"	Ground Key or ball valve	1" cc threads C1 and AC Pipe	1" PJ for PE CTS	Mueller H15008 with insert H504385 Ford FB1000 with Ins. #52 J3401 with insert J2805
Service Pipe [3]	1"				C.T.S. PE 3408 CL. 160 with Trace Wire
Angle Stop [4]	1"	Ground Key or Ball Valve with Lockwing	1" PE CTS Mueller Instatite	1" Straight Thread Swivel Nut	Mueller H14267
Angle Stop	1"	Ground Key or Ball Valve with Lockwing	1" PE CTS Compression	1" Straight Thread Swivel Nut	Mueller H14258 with Insert H504385

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED SECOND ITEM #6 & MADE ITEM #10 OPTIONAL	
Date 12/00				

Approved By:

F. Wally Sandelin 9/25/02

F. Wally Sandelin
City Engineer
R.C.E. 39895

Date

STD PLAN 403

CITY OF LODI

PUBLIC WORKS DEPARTMENT

1" Water Service Materials List

Fitting (a.)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Angle Stop	1"	Ground Key or Ball Valve with Lockwing	1" PE CTS PJ	1" Straight Thread Swivel Nut	J–4201 with Insert J2805 Ford KV 43–342W with Insert
Spacer [5]	1"	Schedule 80 PVC 9" long with rubber or leather washer	1" IPT	1" IPT	1" v 9" Sch. 80 PVC IPT Mueller H10887
Coupling [6]	1"	Bronze or Brass coupling and bushing to adapt spacer to customer valve – Bushing may be at either end of coupling depending on size of coupling order	1" Straight Thread swivel Nut	1" IPT	Mueller H10891, H10890, H1089_ or H10897 with 3/4" x 1" brass bushing Jones J–134 or J130 with 3/4" x 1" brass bushing Ford C–38–24–2.625
Customer Valve [7]	1"	Brass or bronze Angle Globe Valve with Handwheel All valves must have brass handles	IPT	IPT	Mueller 8130 Stockham B–216 Nibco T–311–Y
Customer Stub [8]	1"				IPS PVC Schedule 40 per Uniform Plumbing Code. (Same size as service pipe)

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED SECOND ITEM #6 & MADE ITEM #10 OPTIONAL	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

STD PLAN 403

CITY OF LODI

PUBLIC WORKS DEPARTMENT

1" Water Service Materials List

Fitting (a)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Service Box [9]		All lids to read Water			Christy FL30 Box 12 (1" Backyard service easements only) Christy FL30D lid (1" Backyard service easements only) Christy N16 or Bes C16E Box Christy B16D or Bes D30 Lid (Grass Areas, Flush Fit foot traffic only) Christy B16C or Bes C30 Lid (Flush Fit Driveways, Sidewalks) Christy B16–61D or Bes 61D30 Lid (3/16" steel checker Flush Fit Driveways, Sidewalk)
90° PJ Elbow [10]	1"		1" PJ CTS	1" PJ CTS	1" Ford L44–44 with Insert

a. Alternative fittings must be approved by the City Engineer.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED SECOND ITEM #6 & MADE ITEM #10 OPTIONAL	
Date 12/00				

Approved By: F. Wally Sandelin 9/25/02

F. Wally Sandelin
City Engineer
R.C.E. 39895

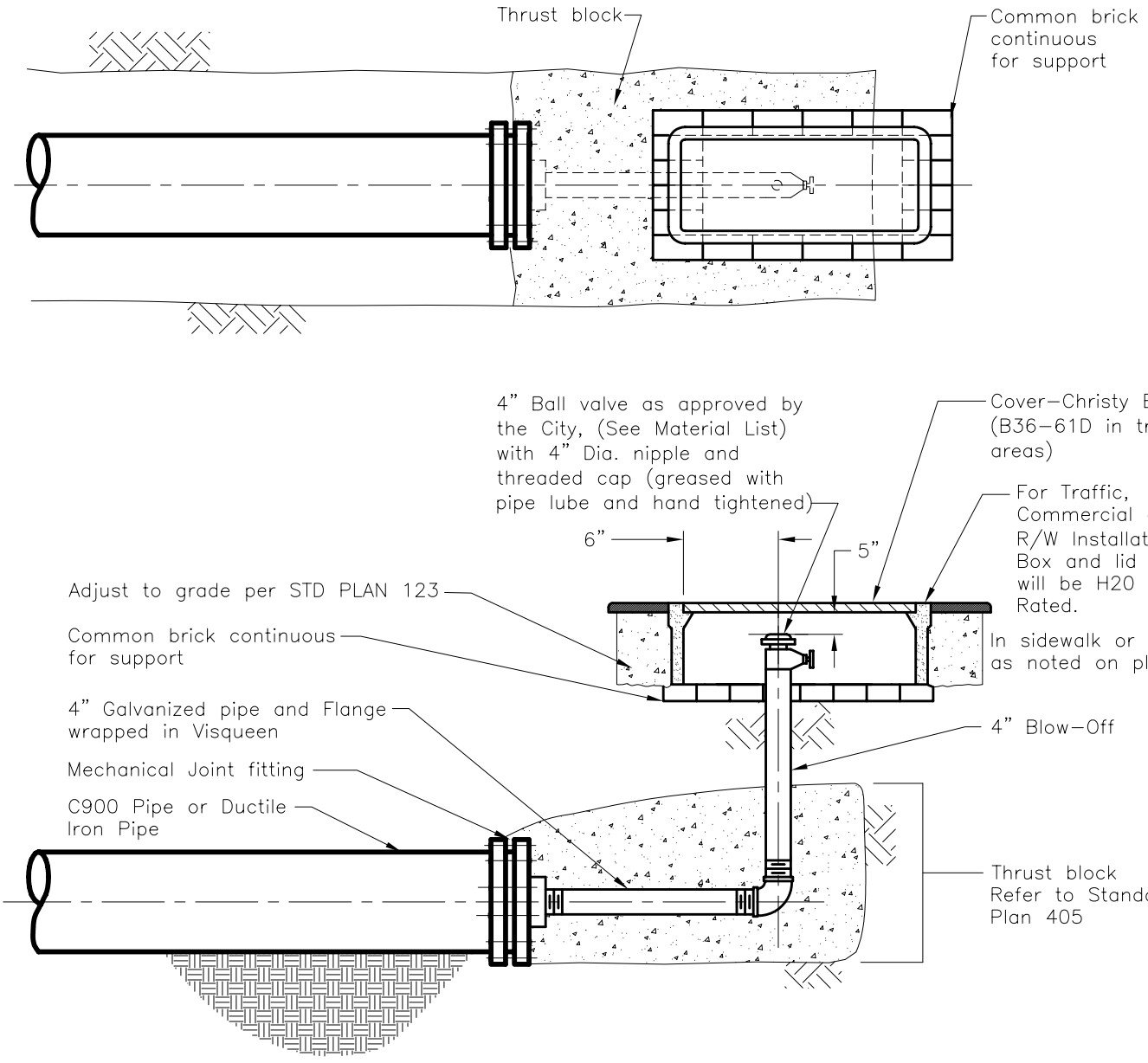
Date

STD PLAN 403

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water Blow–off Permanent



Notes:

1. No services within 3' of blow–off.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	REVISED APPROVED BALL VALVE	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

STD PLAN 404

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water Blow–off Permanent Material List

Material List for Standard Plan 404

City Approved Ball Valves
- Flow–Teck's Forged Brass Ball Valve Model S50
- Matco–Norca, Inc. Model 752 or
- Watts Model 75–0211

City Approved Boxes
- Box Bes C–36W or Christy B–36 or
- Christy B–17 x 30

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	REVISED APPROVED BALL VALVE	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

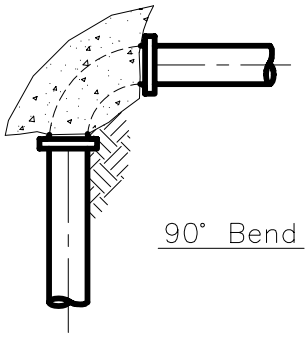
9/25/02
Date

STD PLAN
404

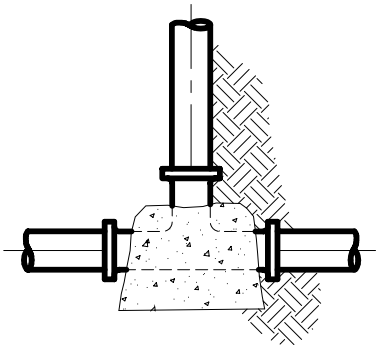
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Thrust Block Requirements

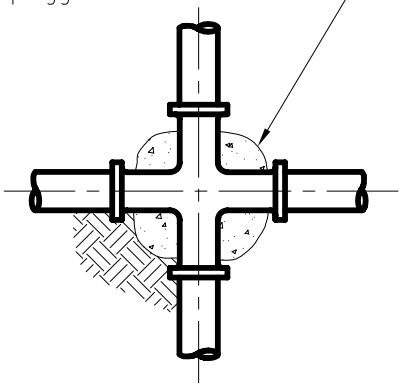


90° Bend

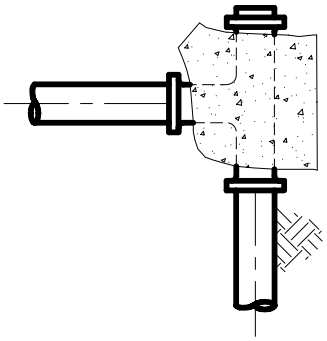


Tee

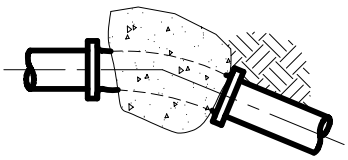
No thrusting on cross except where ends are plugged.



Cross

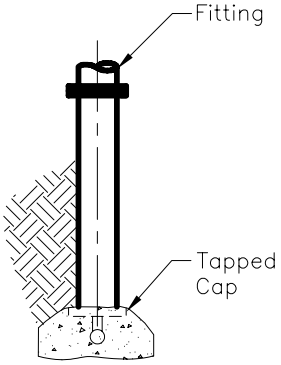


Plugged Tee



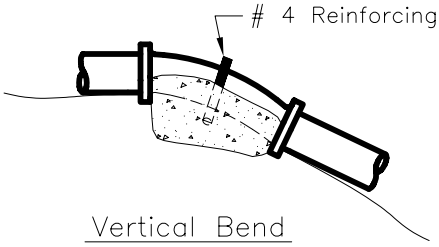
45° or 22½°

Horizontal Bend



Blow off

Minimum Thrust Block Bearing Areas In Square Feet				
Pipe Sizes	90°	45°	22½°	Tees & Blow Off
6"	3	2	2	2
8"	4	3	2	3
10"	6	4	3	4
12"	8	5	3	6
14"	12	7	4	8



Vertical Bend

Notes:

1. Concrete shall be 2000 PSI minimum at 28 days.
2. Thrust blocks shall be placed against undisturbed earth.
3. All fittings shall be supported in concrete.
4. For fire hydrant thrusting see Std. Plan 401.
5. Don't cover flange bolts with concrete.
6. Mechanically restrained joints as required by the City. See Material List Page 2.
7. Wrap all fittings and flanges with Visqueen.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED NOTE #7	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

STD PLAN 405

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Thrust Block Requirements Material List

Material List for Standard Plan 405

City Approved Mechanical Restrained Joints

Pipe Material	Joint
Ductile Iron	Mega–Lug 1100
C900PVC	Mega–Lug 2000
IPS PVC	Mega–Lug 2000
PVC Bell and Spicket	Mega–Lug 1600

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED NOTE #7	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

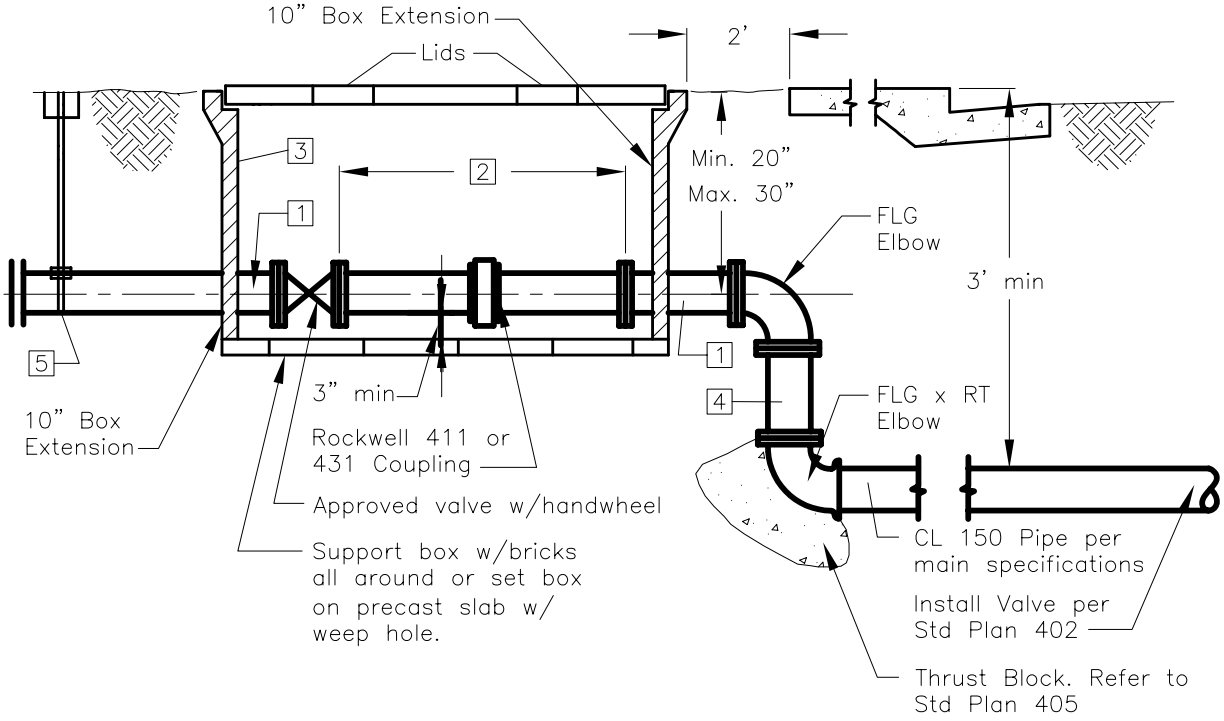
9/25/02
Date

STD PLAN
405

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Domestic Water Service (3", 4", 6" & 8")



Notes:

1. Meter (if required) will be furnished and installed by City.
2. Bypass may be installed with the specific approval of the Public Works Director.
3. Plug all openings in box.
4. Backfill shall conform to Std Plan 501.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

STD PLAN
406

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Domestic Water Service (3", 4", 6" & 8") Materials List

[1] FLG Spool, 24" long (2 ea) (C.I., D.I., or steel)

[2] FLG x Plain end spool (2 ea) Leave 1" gap at coupling
3" – 15" long
4" – 15" long ends of spools
6" – 20" long (C.I. or steel)
8" – 20" long

[3]

Christy or Bes Box	Lid (Traffic)		Box Extension
	Christy	Bes	
3"+4" B–48 or C48W	B48–62D	62D85	10" Box Extension B48 x 10
6"+8" B–52 or C52W	B52–62D	62D90	10" Box Extension B52 x 10

[4] FLG Spool, lengths as needed (optional) (C.I., D.I., or steel)

[5] Temporary Blowoff per Std Plan 409. 2" for 4"–6" service, 4" for 8" and larger service.

All fittings shall be cast or ductile iron or steel (as noted) and shall conform to applicable AWWA Standards. (Sch. 40, 150 lb. FLG)

Traffic Lids shall be used in all location.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

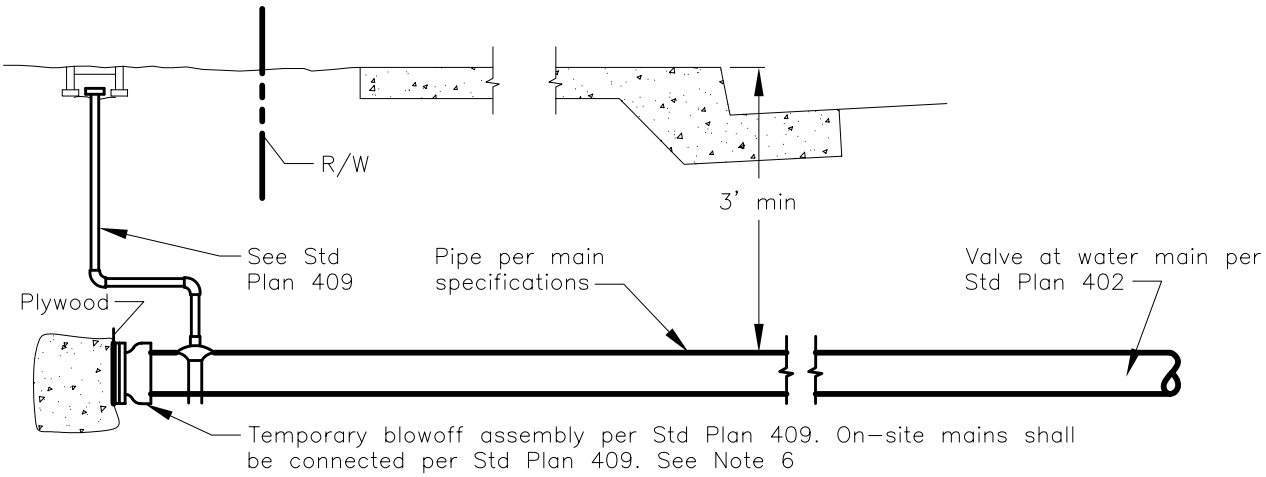
Approved By: F. Wally Sandelin 12/28/00
F. Wally Sandelin
City Engineer
R.C.E. 39895
Date

STD PLAN 406

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Fire Service



4" & Larger Service

Notes:

1. If not alarmed a detector check valve w/bypass meter shall be installed at fire-sprinkler system connection only. Installation details shall conform to Fire Dept. and Bldg. Dept. requirements. (See Detail A)
2. On-site fire mains shall be completely isolated from domestic lines.
3. On-site fire mains looped to the City system must be specifically approved by the Public Works Director and must be equipped with double check valve assemblies at each connection. In such cases the services shall be installed per Std. Plan 406 with the Double Check Valve assemblies installed in an appropriately sized box at the property line.
4. Suitable backflow prevention devices will be required for fire systems having auxiliary sources of supply, elevated tanks or chemical additives, or other special conditions.
5. Sufficient valves shall be provided to separate sprinkler, hydrant and domestic systems. Additional main line valves may be required depending on the complexity of the on-site system.
6. Pressure and bacteriological tests per City of Lodi Construction Specifications are required for on-site systems unless waived by the Public Works Director.
7. Systems with booster pumps shall be equipped with a pressure sustaining valve to the approval of the Public Works Director.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	REVISED F.D.C. LOCATION	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

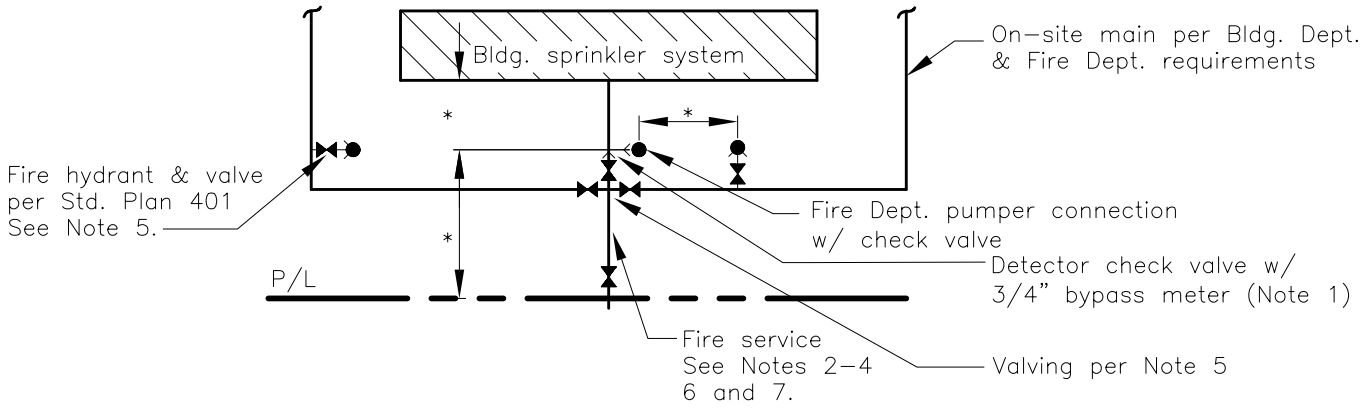
STD PLAN
407

CITY OF LODI

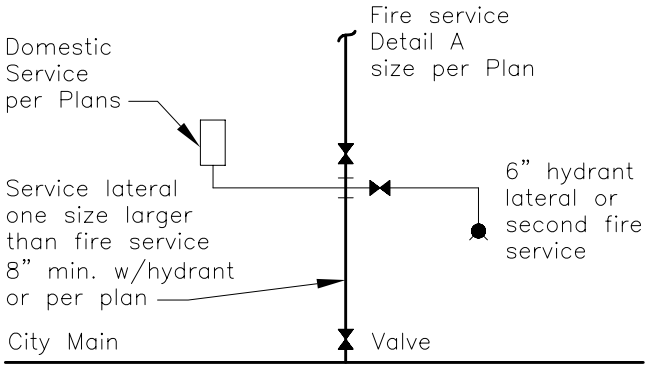
PUBLIC WORKS DEPARTMENT

Fire Service

* Locations of hydrants, Fire Dept. connections & detector checks to be determined by the Fire Marshal.



Detail A
Fire Service



Detail B
Combined Fire/Domestic Service

Sheet 2 of 2

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	REVISED F.D.C. LOCATION	
Date 12/00				

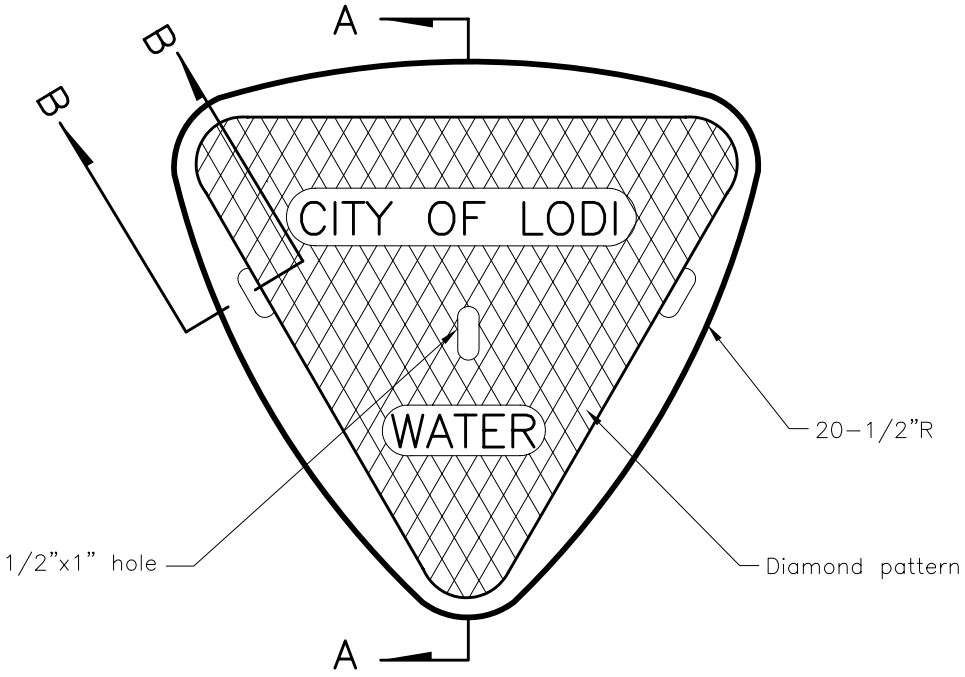
Approved By:
F. Wally Sandelin
City Engineer
R.C.E. 39895
9/25/02
Date

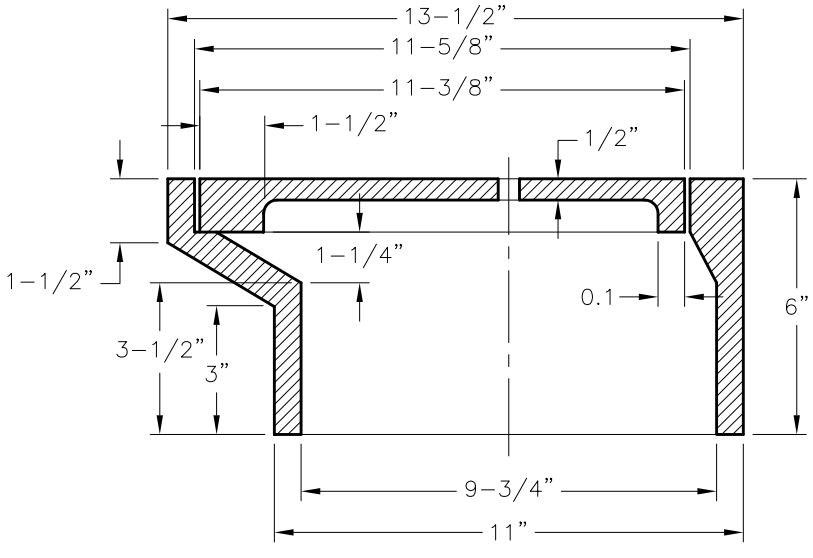
STD PLAN
407

CITY OF LODI

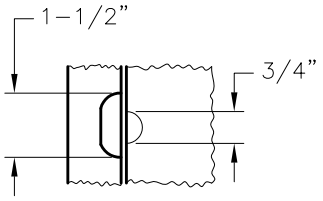
PUBLIC WORKS DEPARTMENT

Water Valve Frame & Cover

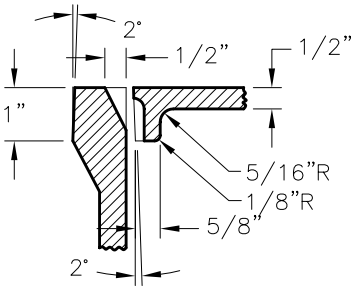




Section A–A



Plan View



Section B–B

Notes:

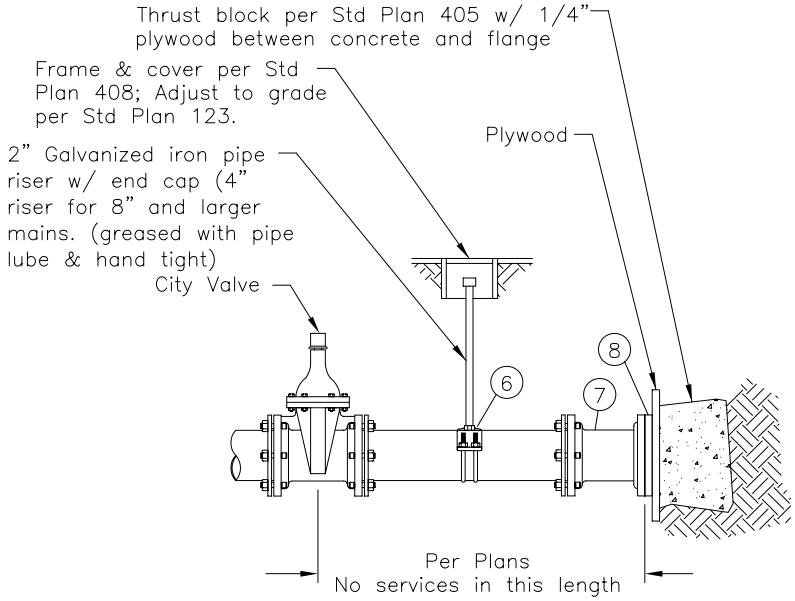
1. Frame – Wt 50 Lbs.
2. Cover – Wt 16 Lbs.
3. Material – Cast Iron

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	408
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

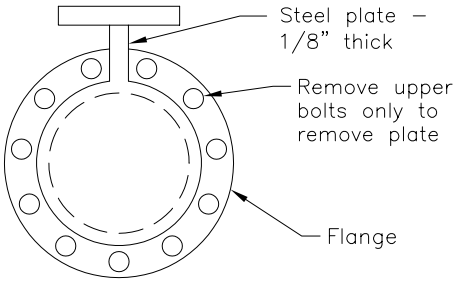
CITY OF LODI

PUBLIC WORKS DEPARTMENT

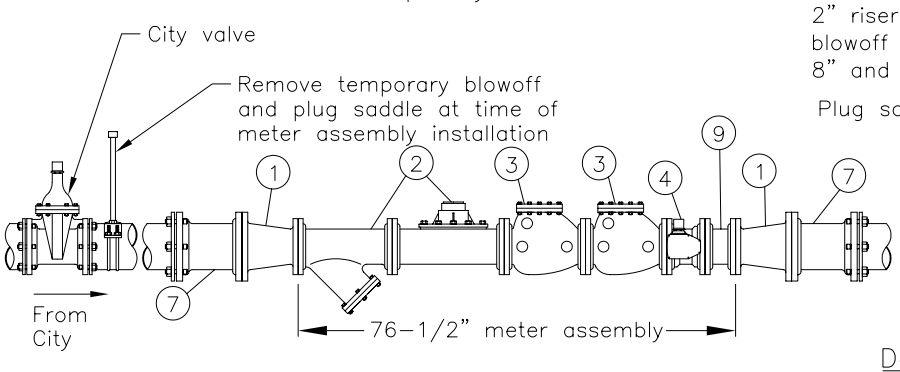
Temporary Water Blow–off and Connection Details



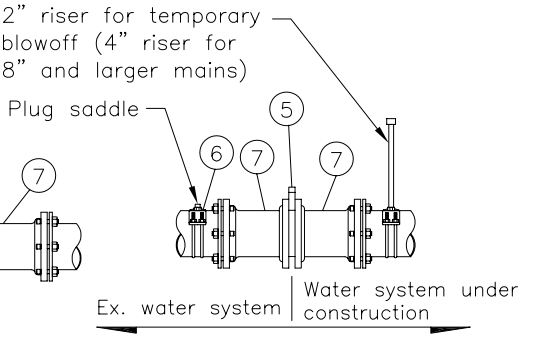
Temporary Blow–off



Removable Steel Plate



Detail A: Temporary Connection with Meter Assembly



Detail B: Temporary Connection without Meter Assembly

Notes:

1. The Contractor shall not operate any City valves. 24 hours notice is required for operation by City.

2. All connections to the existing system shall be made per Details A or B. Upon acceptance of the new system, the Contractor shall remove the riser, plug the saddles and remove the steel plate. Contractor shall also remove the meter assembly and install a flanged spool. Meter assembly shall be returned to the City.

3. Contractor shall supply and install reducers on meter assembly where main is larger than 6".

4. City shall furnish meter assembly upon receipt of deposit. Meter assembly to be installed by Contractor.

Dr. SN	No.	Date	Revision	Appr.
Ch. WS	1	9/25	REDRAWN	
Date 02/02				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

STD PLAN 409

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Temporary Water Blow–off and Connection Details Materials List

Fittings Legend:

1. Flanged Reducer (Furnished by the Contractor)
2. Meter with Strainer
3. Check Valve
4. Butterfly Valve
5. Removable Steel Plate.
6. Double Strap Malleable Iron Saddle
7. Adapter MJ/FLG, Full face flange only. (Furnished by the Contractor)
8. Blind Flange
9. 6" Flg x Flg spool w/ 2" tapped fitting

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	REDRAWN	
Date 12/00				

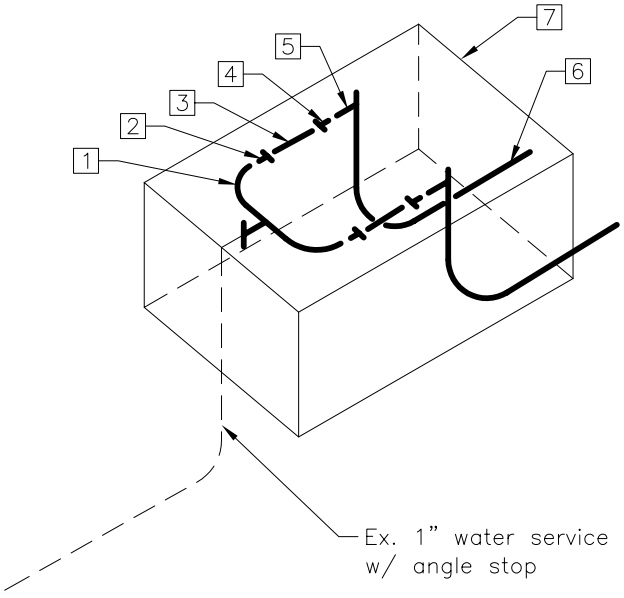
Approved By: F. Wally Sandelin, City Engineer, R.C.E. 39895 — 9/25/02 Date

STD PLAN 409

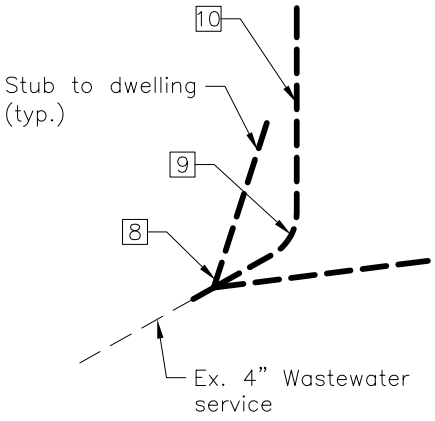
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water & Wastewater Service Modification



Water Service



Wastewater Service

Notes:

1. This standard plan to be used for modification of existing Water an Wastewater services to lots being split for construction of zero lot line dwellings or where two services are sharing a tap.
2. See Std Plan 403 for water service details.
3. Wastewater materials to be ESVCP ASTM C-700, PVC ASTM D3034 SDR 35 or ABS ASTM D-2751
4. Locate service box and clean-out as close as possible to Property Line.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

STD PLAN
410

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water & Wastewater Service Modification Materials LIst

Legend:

1. Mueller H-15364 U-Branch Connection 1" inlet 8" center to center. 3/4" outlet
2. Mueller H-14215 Meter Coupling catalog size 5/8"x3/4"x3/4".
3. 9" lg. spacer per Std Plan 403
4. Mueller H-10890 Coupling.
5. 3/4" Customer Valve-Stockham B-216, Mueller 8130, Nibco T-311-Y.
6. 3/4" Sch. 40 PVC Stub.
7. Christy B-36 box per Std Plan 412
8. 4" Double Wye or 2-4" Wyes in-line.
9. 4"-90° Elbow (long bend)
10. Cleanout per Std Plan 201

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By: F. Wally Sandelin 12/28/00

F. Wally Sandelin
City Engineer
R.C.E. 39895

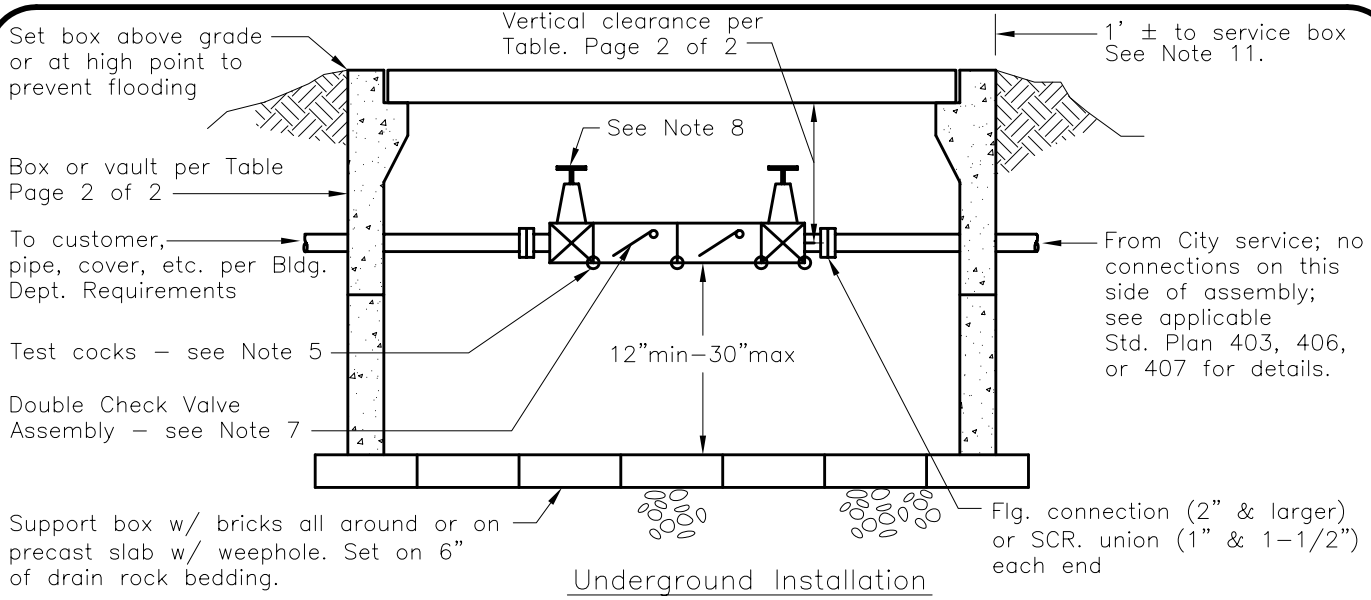
Date

STD PLAN 410

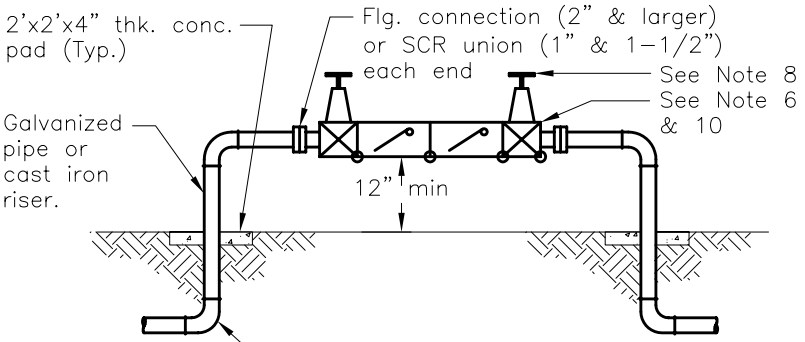
CITY OF LODI

PUBLIC WORKS DEPARTMENT

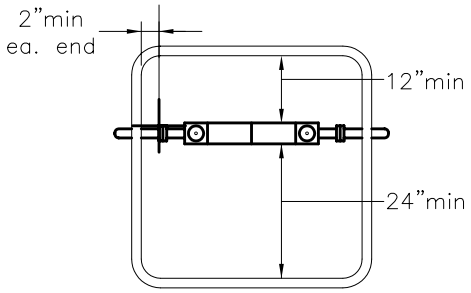
Double Check Valve Assembly



Underground Installation



Above Ground Installation



Plan

Notes:

1. It is the customer's responsibility to have the assembly tested prior to acceptance and annually by a State Certified Backflow Prevention Tester and report the results to the Public Works Department.
2. Plug all openings in box.
3. Traffic lids shall be used where applicable.
4. Vertical clearance may be increased for OS&Y valves.
5. Offset box over assembly to provide testing clearance per plan.
6. Assembly installed above ground may be enclosed with clearances similar to underground installation.
7. Use FEBCO 805Y or approved equal per State Standards.
8. Valve handles may be chained & padlocked for security.
9. This plan for domestic service only. Design for fire service applications to have approval of Public Works Director and Fire Marshal.
10. Install guard posts where device is installed in paved areas accessible to traffic or in planters less than 3' behind the curb or when directed by City.
11. Locate immediately downstream of water service box.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

STD PLAN 411

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Double Check Valve Assembly Materials List

Size	Vertical Clearance min	Vertical Clearance max	Box or Vault / Lid (See Note 3) (min)
1"	8"	18"	Christy B40 or Bes C40W Box/ Christy B40–61D or Bes 61D75
1–1/2"	10"	20"	Christy B48 or Bes C48W Box/ Christy B48–62D or Bes 62D85
2"	10"	20"	Christy B48 or Bes C48W Box/ Christy B48–62D or Bes 62D85
3"	16"	30"	4'x4' / Split, hinged lid similar to Forni–HAL–Lucero Assembly — Christy B52 or Bes C52W box/ Christy or Bes 62D90
4"	20"	36"	4'x4' / Split, hinged lid similar to Forni–HAL–Lucero Assembly — Christy B52 or Bes C52W box/ Christy or Bes 62D90
6"	24"	40"	7'x5' / Split, hinged lid similar to Forni–HAL–Lucero Assembly — Christy B52 or Bes C52W box/ Christy or Bes 62D90
8"	30"	48"	7'x5' / Split, hinged lid similar to Forni–HAL–Lucero Assembly — Christy B52 or Bes C52W box/ Christy or Bes 62D90

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

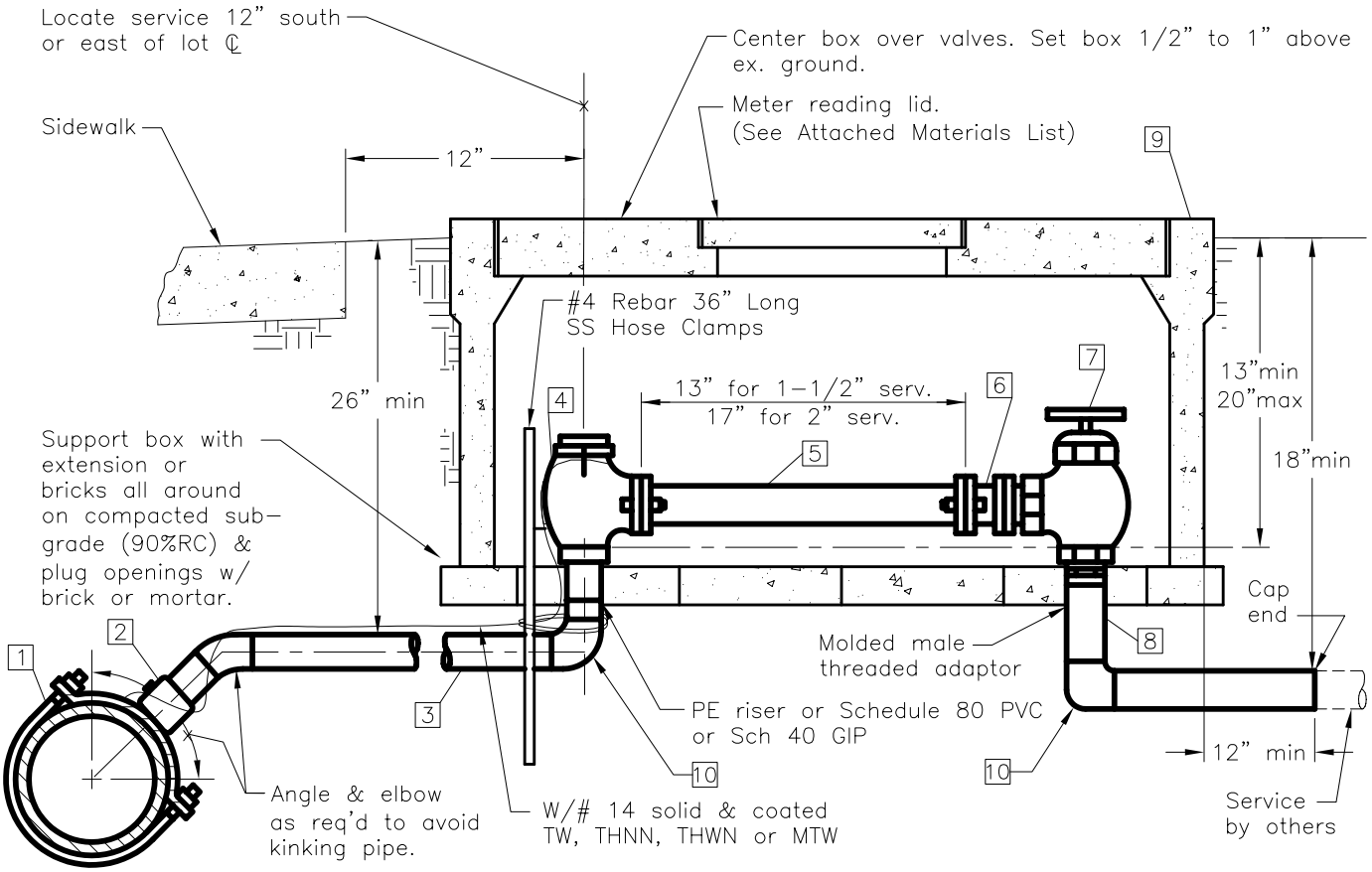
12/28/00
Date

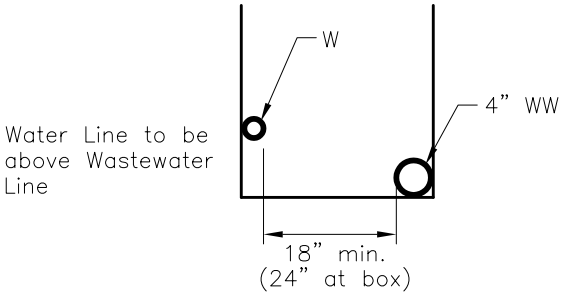
STD PLAN 411

CITY OF LODI

PUBLIC WORKS DEPARTMENT

1–1/2" & 2" Water Service





Trench Section

Notes:

1. Maintain 24" clearance between tap and any coupling, fitting or adjacent tap. Plastic services shall be installed with slack in the line. If the service is installed in the same trench as sanitary service, the water service shall be installed without splices and the trench section shown applies:
2. S.S. liners required on PE pipe fittings.
3. Backfill shall conform to Std Plan 501.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED END CAP	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

STD PLAN 412

CITY OF LODI

PUBLIC WORKS DEPARTMENT

1-1/2" & 2" Water Service Materials List

Fitting (a)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Saddles [1]	1-1/2" & 2"	For C1-AC & Ductile Iron Pipe Ductile Iron Double Strap Saddle No Single Strap Saddles		IPT	Rockwell 313 Apac 102 Other manufacturers with similar designs o.k.
Saddles	1-1/2" & 2"	For C900 Pipe		IPT	Romac 101S Mueller H1349 with 1P thread
Corp. Stop [2]	1-1/2"	Oriseal or Ball Valve	Saddle IPT 1-1/2" 1-1/2" IPT	1-1/2" PJ CTS	All PJ must have inserts 1-1/2" J1935 with insert J2805 1-1/2" FB1100 with insert 54 1-1/2" Mueller H15023 with insert 506139
Corp. Stop	1-1/2"	Oriseal or Ball valve	1-1/2" Saddle IPT 1-1/2" IPT	1-1/2" IPT	All PJ must have inserts 1-1/2" FB500 with C14-66 FIPT CTS PJ adapter with Insert 1-1/2" J1943, J2607 FIPT Adapter CTS with Insert 1-1/2" Mueller H9969 with H15451 CTS Adapter with Insert 506139
Corp. Stop	2"	Oriseal or Ball Valve	2" Saddle IPT 2" IPT	2" PJ CTS	All PJ must have inserts 2" J1935 with insert J2805 2" FB1100 with insert 55 2" Mueller H15023 with insert 506141
Corp. Stop	2"	Oriseal or Ball Valve	2" IPT	2" IPT	All PJ must have inserts 2" FB 500 with C14-77 IPT CTS Adapter with Insert 2" J1943 with J2607 with Insert 2" Mueller 9969 with H15451 CTS Adapter with insert 506141

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED END CAP	
Date 12/00				

Approved By: F. Wally Sandelin 9/25/02

F. Wally Sandelin
City Engineer
R.C.E. 39895

Date

STD PLAN 412

CITY OF LODI

PUBLIC WORKS DEPARTMENT

1–1/2" & 2" Water Service Materials List

Fitting (a)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Service Pipe [3]	1–1/2" & 2"				C.T.S. PE 3408 200 PSI SDR9 ASTM D–2737 Sch 80 PVC with trace wire, or Sch 40 GIP
Angle Stop [4]	1–1/2" & 2"	Ground Key or Ball Valve with Lockwing	PJ CTS	1–1/2" & 2" 2 hole meter flange	1–1/2" Ford FVV 43–666W with Insert 2" Ford FV 43–777W with Insert J4205 with Insert 2" x 1–1/2" Mueller H14277 with Insert
Spacer [5]	1–1/2" & 2"	Bronze or Brass flanges meter x FIPT with Sch. 80 PVC Spacer 13" long for 1–1/2" Service 17" long for 2" Service	2 Hole Flg x FIPT	2 Hole Flg x FIPT	J129 1–1/2" Ford #6F Flg 2" Ford #7F Flg 2x16 Sch. 80 PVC IPT
Coupling [6]	1–1/2" & 2"	Flanged meter coupling adapter Malleable Iron	2 Hole Flg without ring	Compression coupling to fit 2" or 1–1/2" Sch. 80 Nipple	Rockwell 926 Meter Coupling with 4" Sch. 80 Nipple IPT x plan End
Customer Valve [7]	1–1/2" 2"	Brass or bronze Angle Globe Valve with Handwheel All valves must have brass handle	IPT	IPT	Nibco T–311–Y Stockham B–216 Mueller 8130
Customer Stub [8]	1–1/2" & 2"				IPS PVC Schedule 40 per Uniform Plumbing Code. (Same size as service pipe)

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED END CAP	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

STD PLAN 412

CITY OF LODI

PUBLIC WORKS DEPARTMENT

1-1/2" & 2" Water Service Materials List

Fitting (a)	Size	Basic Feature	Inlet Connection	Outlet Connection	Manufacturer's Nos.
Service Box [9]	1-1/2"	All Lids to read Water Holes in Lids for touch read Probe will be required if a meter is to be installed			Christy B36 or Bes C36W Box Christy B36D or Bes D70 Lid (Flush Fit foot Traffic, Grass Areas) Christy FI36D (Foot Traffic, Grass Areas, Flush fit) Christy B36-61D 1/4" Steel Checker Plate (Driveways, Sidewalks) Christy B1730 Full Vehicular Traffic Box
	2"	All Lids to read Water Holes in Lids for touch read Probe will be required if a meter is to be installed			Christy B40 or Bes C40W Box Christy B40-61D of Bes 61D75 Lid 1/4" Steel Plate Christy B24x36 Full Vehicular Traffic Box
90° PJ Elbow [10]			1-1/2" PJ CTS	1-1/2" PJ CTS	1-1/2" Ford L44-46 with Insert Jones 1-1/2" J2611 with Insert 2" Ford L44-77 1-1/2", 2" Mueller H-15526 with Insert

a. Alternate Fittings must be approved by the City Engineer.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED END CAP	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

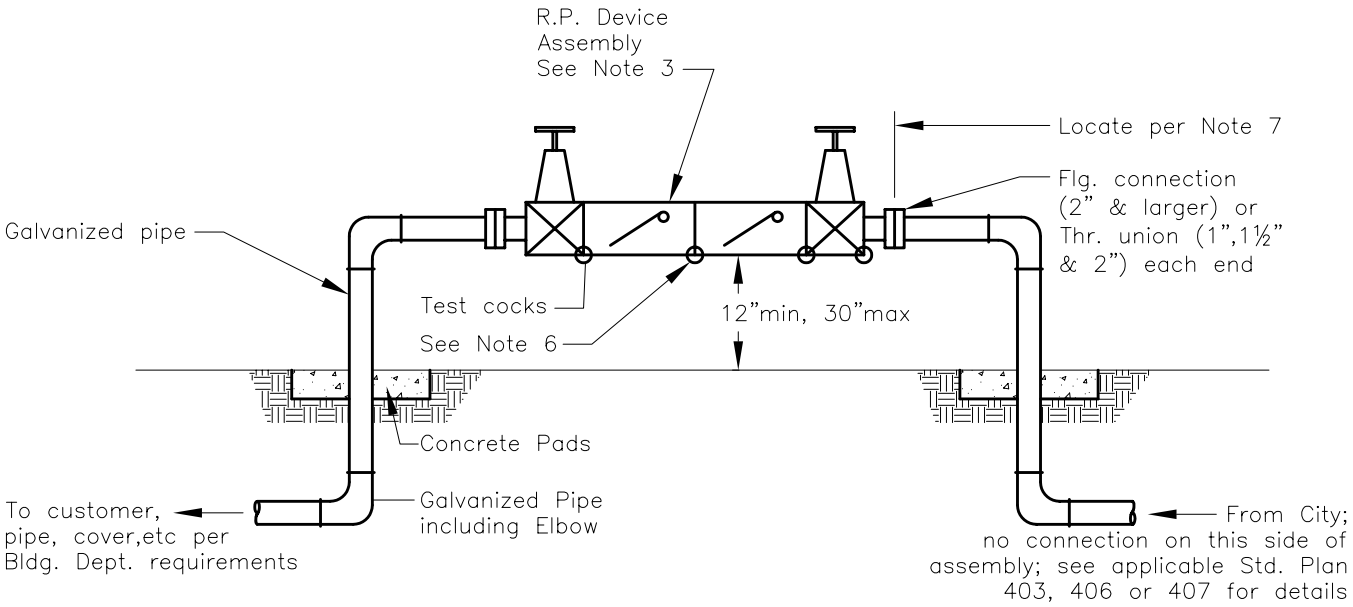
9/25/02
Date

STD PLAN 412

CITY OF LODI

PUBLIC WORKS DEPARTMENT

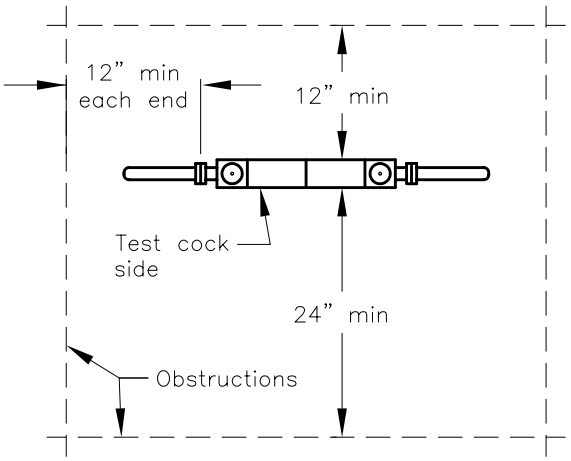
Reduced Pressure Backflow Device Assembly



Above Ground Installation

Notes:

1. It is the customers responsibility to have the assembly tested prior to acceptance and annually by a State Certified Backflow Prevention Tester and report the results to the Public Works Department.
2. Install guard posts where device is installed in paved areas accessible to traffic or in planters less than 3' behind the curb or when directed by City.
3. FEBCO 825Y or approved equal, must be on list of approved Backflow Prevention Assemblies Dept. of Health Services.
4. Valve handles may be chained & padlocked for security.
5. This plan for domestic service only. Design for fire service applications to have approval of Public Works Director and Fire Marshal.
6. Provide drainage (with air gap) for pressure relief discharge.
7. Locate assembly immediately down stream of service box.



Clearance requirements

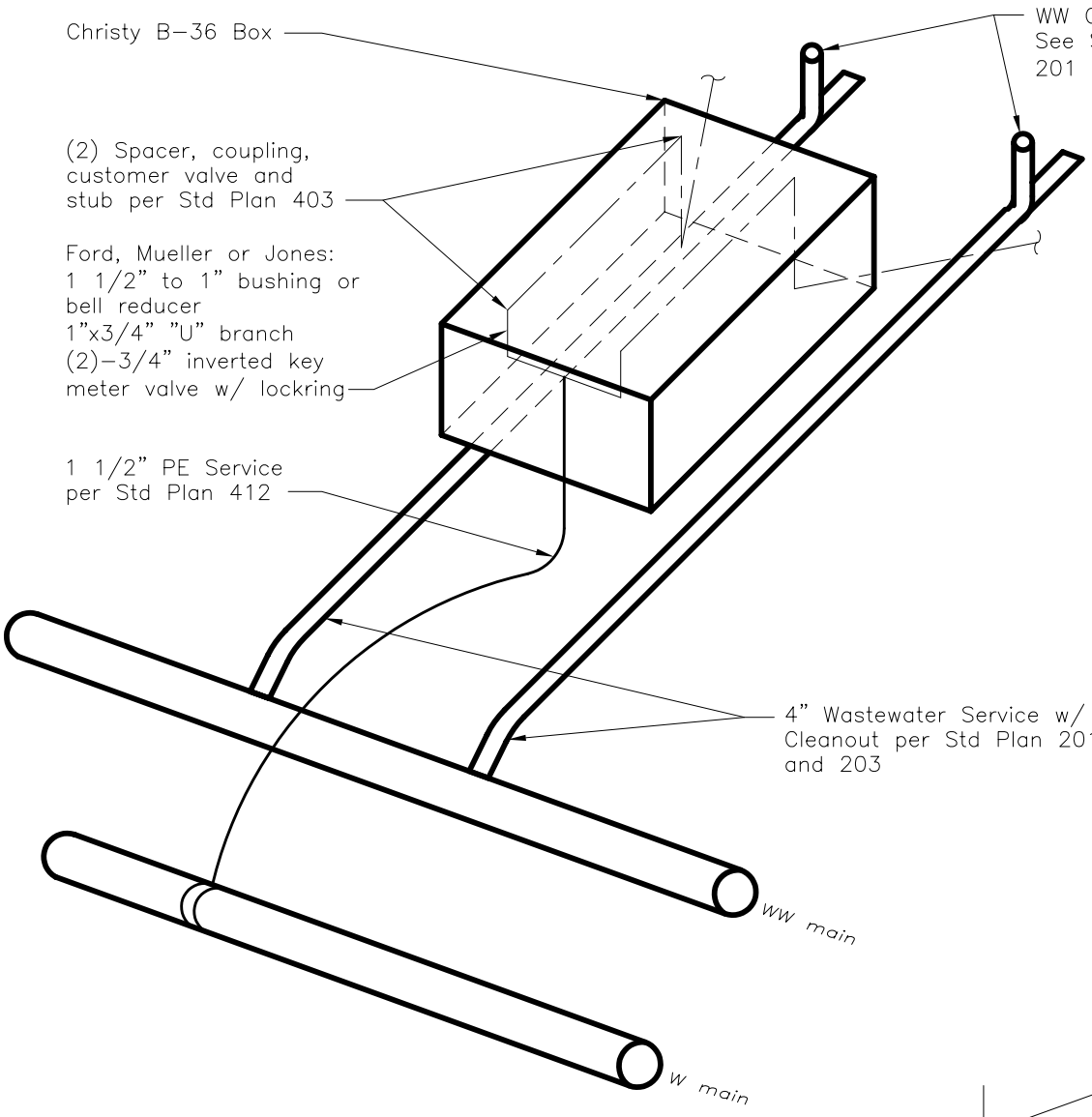
Plan

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	413
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

CITY OF LODI

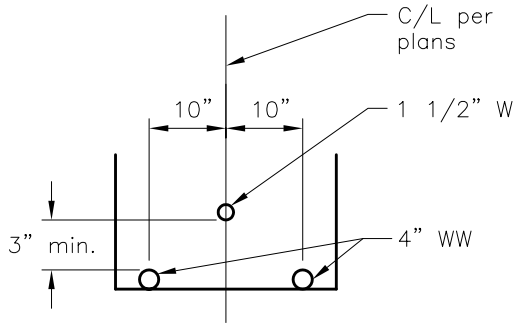
PUBLIC WORKS DEPARTMENT

Dual Water & Wastewater Service



Notes:

1. This Std plan is to be used primarily in residential subdivisions on lot lines opposite the utility joint trench. A utility coordination plan showing service locations is required.
2. See Std Plans 201, 203, 403, and 412 for materials and installation details.



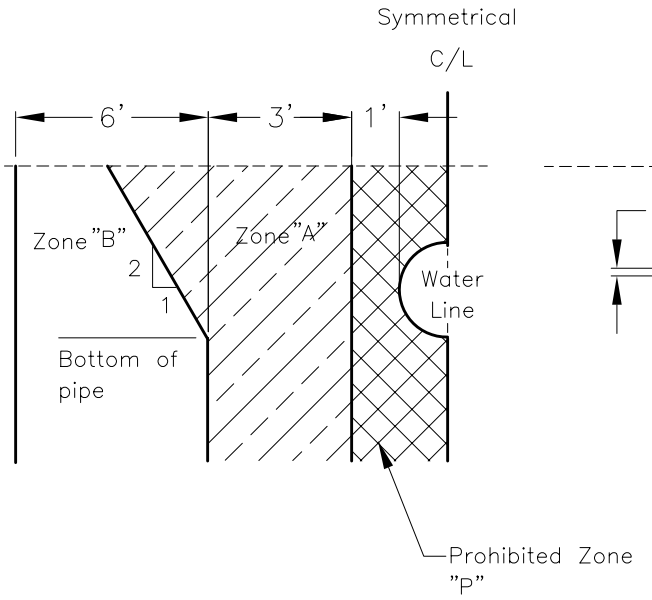
Trench Section

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	414
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

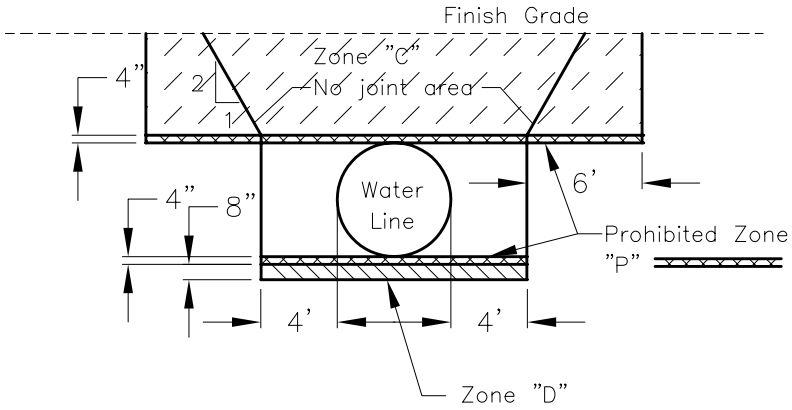
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water Main Separation from Sanitary Hazard–New Wastewater Line Construction



CASE 1
New Wastewater Line
Parallel Construction



CASE 1
New Wastewater Line
Crossing

WASTEWATER LINE CONSTRUCTION REQUIREMENTS

ZONE

A	B	C	D	P
Requires specific approval of the City Engineer details on plans	Pipe: ESVCP, bell & spigot joint only; PVC water pipe; Ductile Iron pipe. (Storm Drain only–Conc. Pipe)	Pipe: Ductile Iron or Class 200 PVC water pipe centered over water main. Note the "No Joint" area over water main	Pipe: Same as Zone C, no joints allowed	Prohibited–No new wastewater line in this area

Notes:

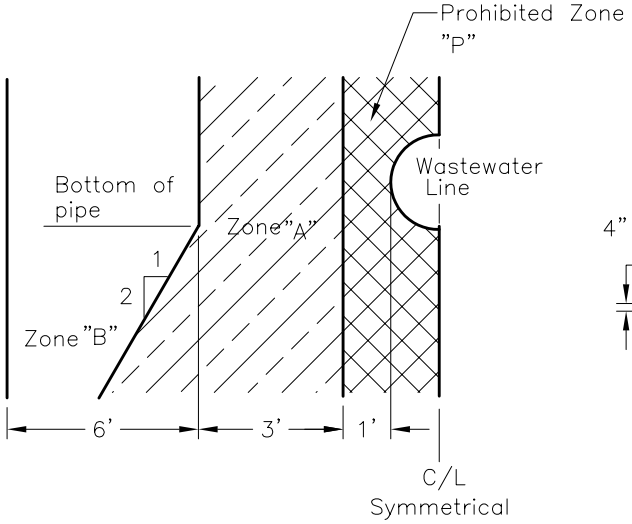
1. This Standard Plan shows normal construction requirements/options for reduced separation of existing water mains from new sanitary sewers and storm drains (including mains & laterals). It does not apply to pipes over 24 inches in diameter, to force mains or to services crossing under a water main (see Note 3). See State Dept. of Health Services Standards for other situations and additional alternatives.
2. Plans shall reference this Standard for specific locations and shall note the zone and construction requirement, or provide details on the plans.
3. Sanitary sewer services crossing under water mains shall maintain 4" minimum clearance.
4. All pipe materials and installation shall be per City of Lodi Design Standards and Construction Specifications.

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	415A
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

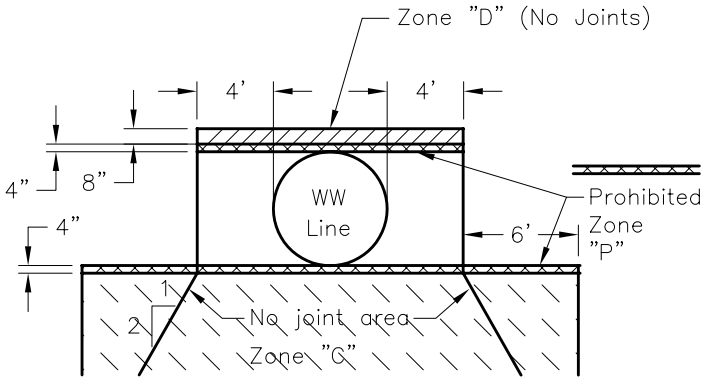
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Water Main Separation from Sanitary Hazard—New Water Main Construction



CASE 2
New Water Line
Parallel Construction



CASE 2
New Water Line
Crossing

WATER MAIN CONSTRUCTION REQUIREMENTS

ZONE

A	B	C	D	P
Requires specific approval of the City Engineer with details shown on the plans.	Pipe: Ductile Iron pipe; PVC, Class 200. Normal pipe standards apply if wastewater line meets Zone B requirements per Std. Plan 415A.	Pipe: Per Zone B Note "no joint" area under Wastewater line. Normal pipe standards apply if wastewater line meets Zone B requirements per Std. Plan 415A.	Pipe: Per Zone B No joint allowed. Normal pipe standards apply if wastewater line meets Zone B requirements per Std. Plan 415A.	Prohibited – No new watermains in this area.

Notes:

1. This Standard Plan shows normal construction requirements/options for reduced separation of new water mains from sanitary sewers (including services, see Note 3) and storm drains (including mains & laterals). It does not apply to pipes over 24 inches in diameter or to force mains. See State Dept. of Health Services Standards for other situations and additional alternatives.
2. Plans shall reference this Standard for specific locations and shall note the zone and construction requirement, or provide details on the plans.
3. Water mains crossing over services shall maintain 4" min. clearance.
4. All pipe materials and installation shall be per City of Lodi Design Standards and Construction Specifications.

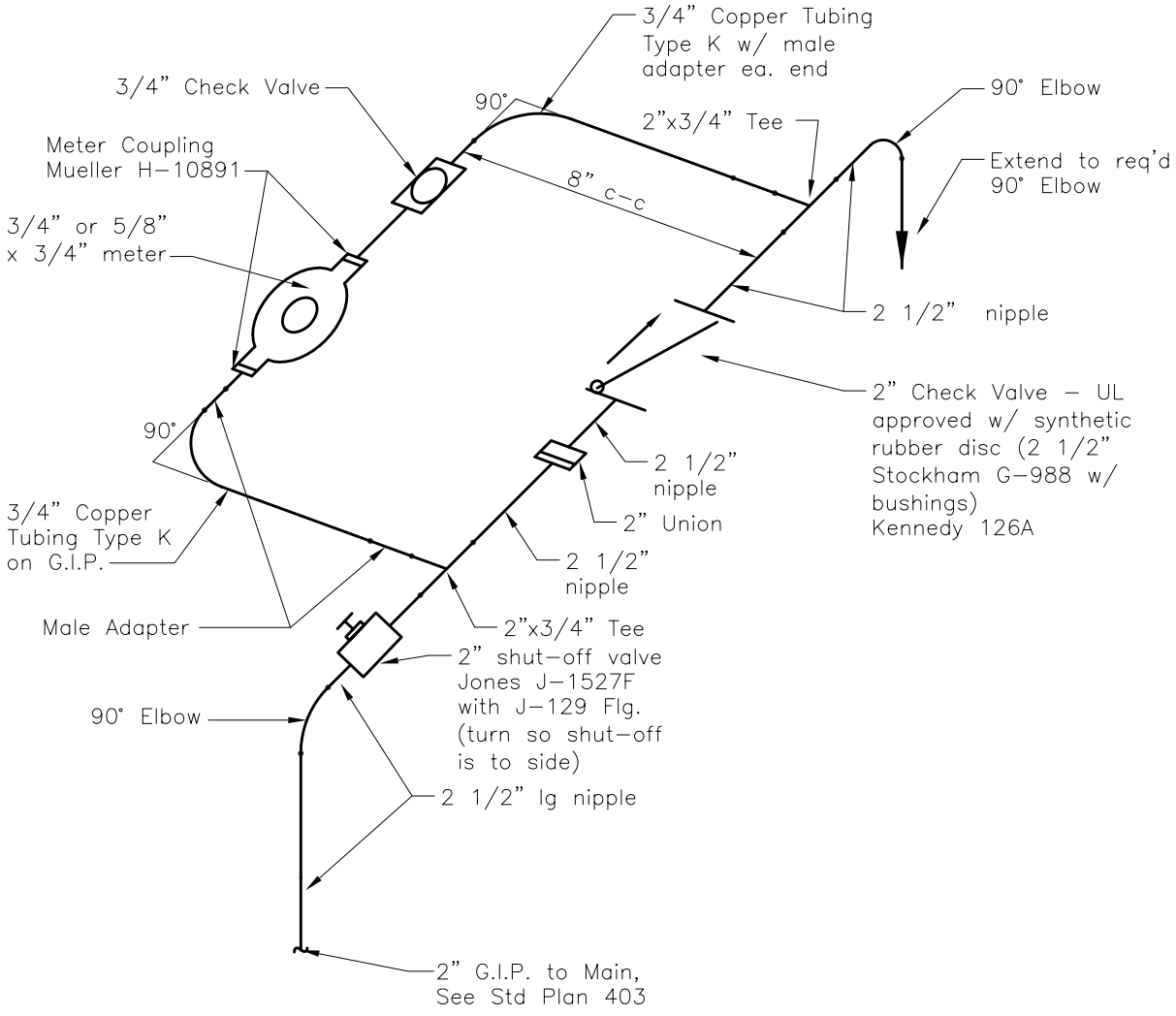
Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00 City Engineer Date R.C.E. 39895	415B
Date 12/00						

CITY OF LODI

PUBLIC WORKS DEPARTMENT

2" Fire Sprinkler Service

Establish for use of Copper Tubing Type K or G.I.P.



Notes:

1. Use Christy B-48 box with traffic lid per Std Plan 403. Center over fittings.
2. City service responsibility is from main to shut-off valve.
3. Meter to be Sensus SR. Support w/ brick.
4. Where Sprinkler system contains chemical additives or other possible contamination exists, Check Valves shown shall be replaced with Double Check Valve Assemblies per Std Plan 411.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

STD PLAN

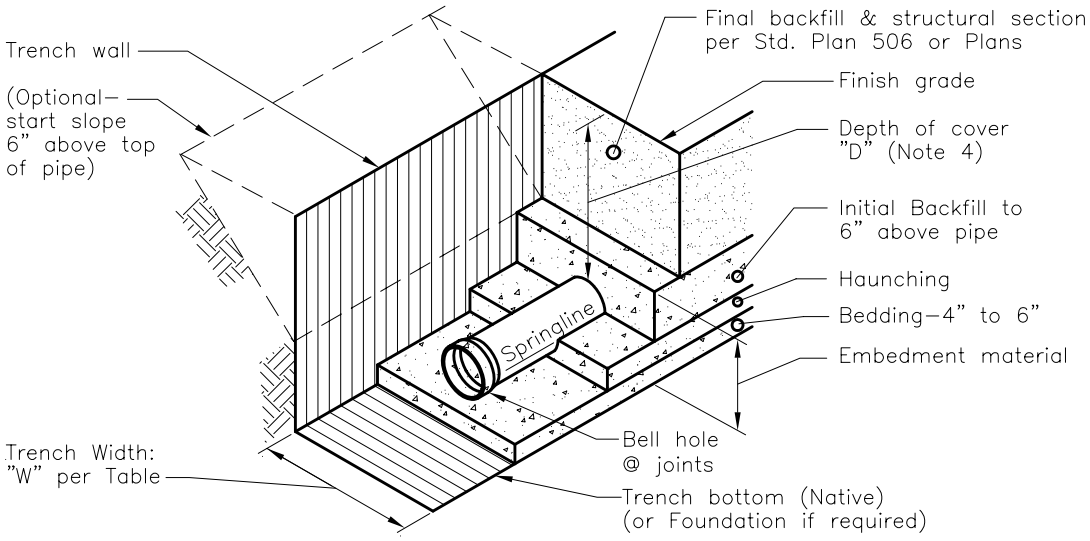
416

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Pipe Bedding & Backfill– Flexible Pipe Trench Section

Pipe Size	Min. "W"
4"	18"
6"	18"
8"	24"
10"	24"
12"	30"
15"	30"



Notes:

1. This Std is for PVC SDR 35 (4" thru 15" dia), C900, & ductile iron pipe (up thru 14" dia) conforming to City Design Standards and Construction Specifications.
2. Class 1 embedment material shall be used unless specified otherwise on the plans.
3. This Std applicable only for stable trench walls where no standing water or groundwater is anticipated. Special details required for unstable soil identified in soils report. For minor occurrences of instability (sand pockets, etc), voids in the embedment zone shall be filled with the specified embedment material to at least two pipe diameters all around the pipe.
4. Minimum depth of cover for mains is 3 ft to finish grade; service laterals per plans.
5. With crushed rock embedment, install a cut–off dam of 3 ft. of approved material every 100 ft. Crushed rock shall meet 3/4" or 1/2" max. aggregate asphalt concrete specifications or as approved by the Engineer.
6. For Water Pipes use native material for backfill.

EMBEDMENT MATERIAL

	CLASS I	CLASS II	CLASS III	CLASS IV	CLASS V
Description USC Soil Type	Crushed Rock 3/4"–1/4" Well graded (See Note 5)	Coarse Sand & Gravel GW, GP, SW, SP	Fine Sand Mixtures GM, GC, SM, SC	Silt,Silty Clays MH, ML, CH, CL	Organic Soils OL, OH, PT
Foundation	If required, per special design to be shown on plans				
Bedding	Consolidate with vibrator or flat shovel "slicing" (See Note 5)	Compact to 85% Min. R.C.	Compact to 90% Min. R.C.	Special Design	Not Permitted
Haunching		Cut–off dam (per Note 5)	Compact to 90% Min. R.C. in two lifts		
Initial Backfill	Per Class II or III, or use crushed rock per above.	Compact to 85% Min. R.C. in two lifts	Compact to 90% Min. R.C, in two lifts		
Maximum Depth of Cover "D" (without special design)	20 ft	20 ft	20 ft		

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED C900 PIPE	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

STD PLAN

501A

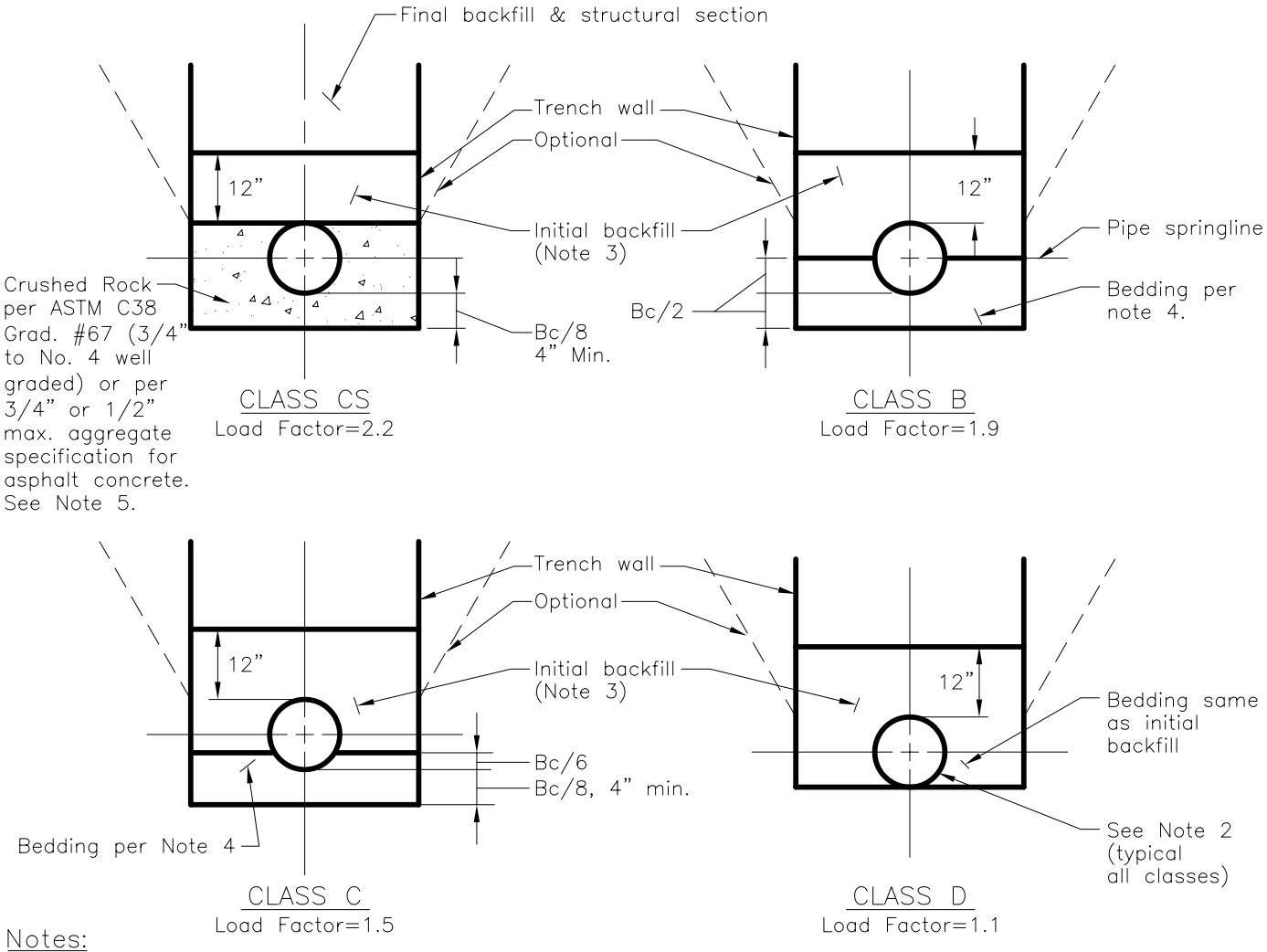
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Pipe Bedding & Backfill– Rigid Pipe Trench Section

Legend:

D=Nominal pipe inside diameter (in.)
Bc=Pipe outside diameter (in.)
Bd=Trench width @ top of pipe=Bc+8" min. each side (24" total minimum)



Notes:

1. This Standard is for rigid pipes 4" & larger; conforming to City Design Stds and Construction Specifications. Use Trench Class as shown on the plans; if not specified, use appropriate class per pipe material and depth of cover per Std Plan 501C.
2. Provide uniform & continuous support of pipe barrel between bell or coupling holes.
3. Initial backfill shall be selected sandy material per Construction Spec. Sect.6–19.02 @ 90% R.C. min.
4. Class B & C bedding material to be crushed rock per Class CS or sand as specified on the plans.
5. With crushed rock bedding, install a cut–off dam of 3 ft. of approved material every 100 ft.

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS	1	6/25	ADDED C900 PIPE		F. Wally Sandelin, City Engineer, R.C.E. 39895 — 6/25/02 Date	501B
Date 12/00						

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Pipe Bedding & Backfill– Rigid Pipe Bedding Requirments

Pipe Material	Class	Size (in.)	Minimum Trench Class per Std Plan 501B Depth of Cover (ft.) 3	4	5	6	7	8	9	10
Asbestos Cement, AWWA C401	150	4 thru 14	D							
Non–Reinforced Concrete, ASTM C–14	2	12	D			C			B	
		15								
		18								CS
		21								
		24								
	3	12	D				C			B
		15								
		18								
		21								
		24								
Reinforced Concrete, ASTM C–76	III	12	C				B			CS
		15								
		18								
		21	D							
		24								
		27								
		30								
	IV	12	D					C		
		15								
		18								
		21								
		24								
		27								
		30								
	V	12	D							
		15								
		18								
		21								
		24								
		27								
		30								
Vitrified Clay Pipe, ASTM C700 Extra Strength		4	D							
		6								
		8								
		10								C
		12								
		15								

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED C900 PIPE	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

STD PLAN

501C

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Standard Abbreviations

Aggregate base	AB
American Society for Testing and Materials	ASTM
American Water Works Association	AWWA
Approximately	APPROX
Asbestos cement pipe	ACP
Asphalt concrete	AC
Back of walk	BOW
Begin curb return	BCR
Begin curve	BC
Begin vertical curve	BVC
Bench mark monument	BM
Blow off	BO
Cable Television	CATV
Cast iron pipe	CIP
Centerline	C/L
Center to Center	C–C
Centimeter	cm
Central angle	△
Central California Traction Company	CCTC
City of Lodi	COL
Class	CL
Cleanout	CO
Commercial driveway	COMM DWY
Compacted Original Ground	COG
Concrete	CONC
Concrete pipe	CP
Construct	CONST
Corrugated metal pipe	CMP
Cubic feet per second	CFS
Cubic yards	CY
Curb & gutter	C&G
Curb, gutter & sidewalk	CG&S
Diameter	DIA
Distance	DIST
Driveway	DWY
Drop inlet catch basin	DICB
Ductile Iron	DIP
Each	EA
Edge of pavement	EP
Electric	ELEC
Elevation	ELEV
End curb return	ECR
End curve	EC
End vertical curve	EVC
Existing	EX
Feet per Second	FPS
Finish grade	FG
Fire Hydrant	FH
Flowline	FL
Fire Service	FS
Face of Curb	FOC
Foot	FT
Gas	G
Galvanized	GALV
Gallons per Minute	GPM
Gas valve	GV
Global Positioning System	GPS
Grade Break	GB
Guy pole	GP
High point	HP
High pressure gas	HPG
Horizontal	HOR
Inch	IN.
Industrial waste	IW
Inside diameter	ID
Invert	INV
Joint use pole	JP
Kilometer	Km
Length	L
Lineal feet	LF
Low proint	LP
Low pressure gas	LPG
Lump sum	LS
Manhole	MH
Maximum	MAX
Meter	M
Millimeter	mm
Minimum	MIN
Miscellaneous	MISC
North, South, East, West	N,S,E,W
Northerly, etc.	N'LY
Original ground	OG
Outside Diameter	OD
Parking meter	PM
Pavement	PVMT
Pedestrian	PED
Point of intersection	PI
Point of reverse curve	PRC
Portland Cement Concrete	POC
Point on tangent	POT
Polyvinylchloride	PVC
Pothole	PH
Power poles	PP
Property line	P/L
Public utility easement	PUE
Pull box	PB

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	6/25	ALL ABBREVIATIONS REVIEWED	
Date 12/00				

Approved By: F. Wally Sandelin 9/25/02

F. Wally Sandelin
City Engineer
R.C.E. 39895

Date

STD PLAN 502

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Standard Abbreviations

Radius	R
Rehabilitate	REHAB
Reinforce,(ed), (ing)	REINF
Reinforced concrete pipe	RCP
Relative compaction	RC
Remote control valve	RCV
Residential driveway	RES DWY
Right of way	R/W
Rubberized Hot Asphalt Concrete	RHAC
Sheet	SHT
Side inlet catch basin	SICB
Sidewalk	SWK
Southern Pacific Railroad	SPRR
Specification	SPEC
Sprinkler head	SH
Square feet	SF
Square type	SQ TYPE
Standard	STD
Station	STA
Storm Drain	SDMH
Storm Drain Manhole	SD
Street Name Sign	SNS
Street light conduit	SL
Subdivision	SUBD
Survey Monument	MON
Tangent	T
Telephone (underground)	TEL
Telephone pole	TP
Top of curb	TOC
Traffic signal conduit	TS
Tree well	TW
Typical	TYP
Underground Service Alert	USA
Underground Utility Vault	UUV
Union Pacific Railroad	UPRR
Vertical curve	VC
Vitrified clay pipe	VCP
Wastewater	WW
Wastewater Manhole	WWMH
Wastewater service	WWS
Water	W
Water service	WS
Water service box	WSB
Water valve	WV
Weakened plane joint	WPJ
Woodbridge Irrigation Dist	WID
Yard	YD

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ALL ABBREVIATIONS REVIEWED	
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

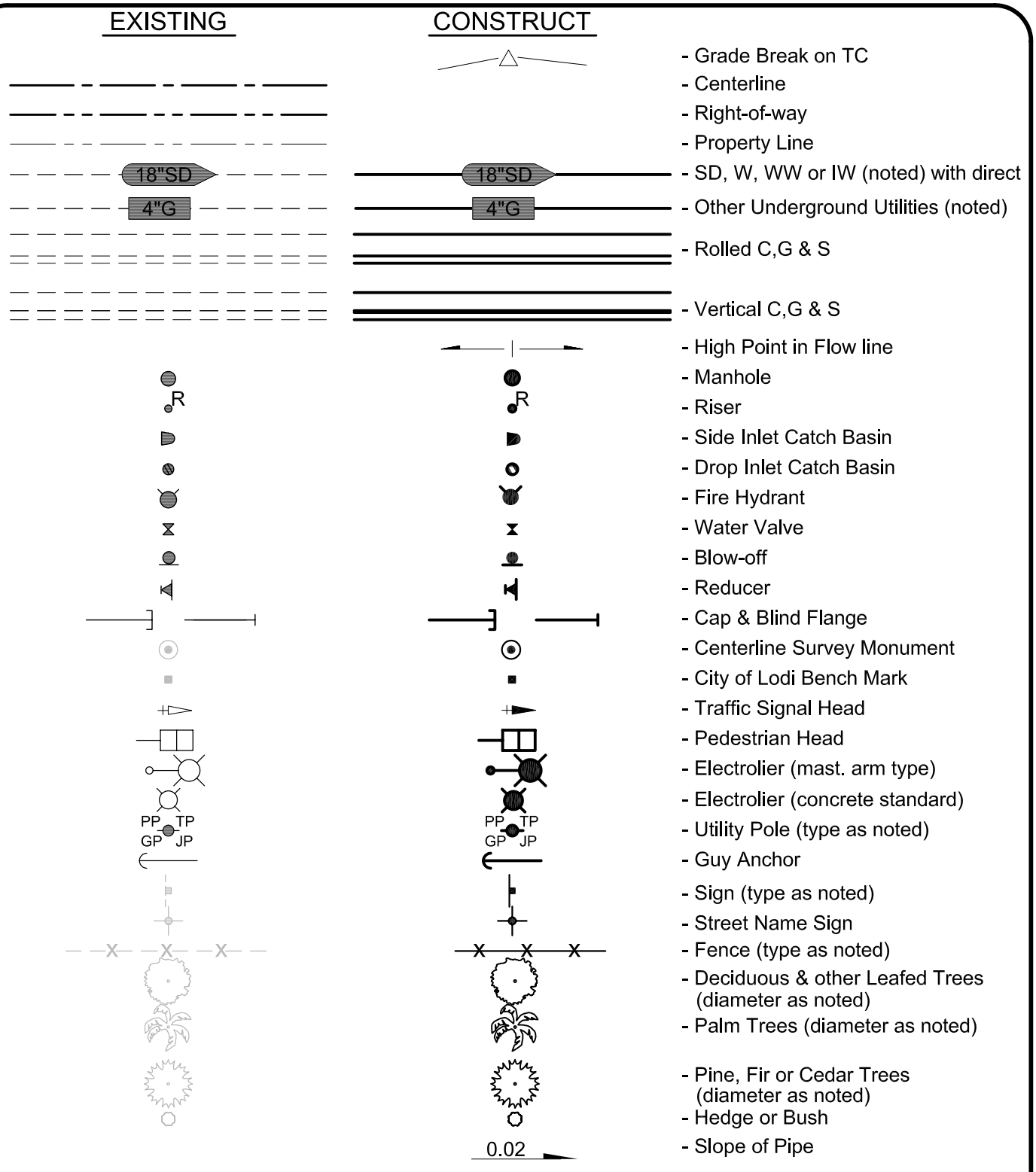
9/25/02
Date

STD PLAN
502

CITY OF LODI

PUBLIC WORKS DEPARTMENT

DRAFTING SYMBOLS



- Grade Break on TC
- Centerline
- Right-of-way
- Property Line
- SD, W, WW or IW (noted) with direct
- Other Underground Utilities (noted)
- Rolled C,G & S
- Vertical C,G & S
- High Point in Flow line
- Manhole
- Riser
- Side Inlet Catch Basin
- Drop Inlet Catch Basin
- Fire Hydrant
- Water Valve
- Blow-off
- Reducer
- Cap & Blind Flange
- Centerline Survey Monument
- City of Lodi Bench Mark
- Traffic Signal Head
- Pedestrian Head
- Electrolier (mast. arm type)
- Electrolier (concrete standard)
- Utility Pole (type as noted)
- Guy Anchor
- Sign (type as noted)
- Street Name Sign
- Fence (type as noted)
- Deciduous & other Leafed Trees (diameter as noted)
- Palm Trees (diameter as noted)
- Pine, Fir or Cedar Trees (diameter as noted)
- Hedge or Bush
- Slope of Pipe

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	7/01	UPDATE PER FIRST REVISION	
Date 12/00	2	9/25	REVISED SICB SYMBOL	

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

9/25/02
Date

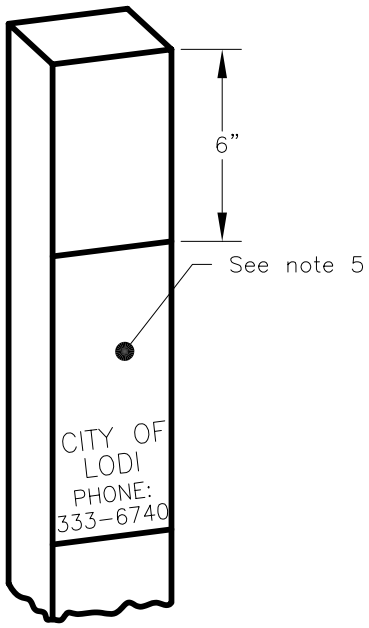
STD PLAN

503

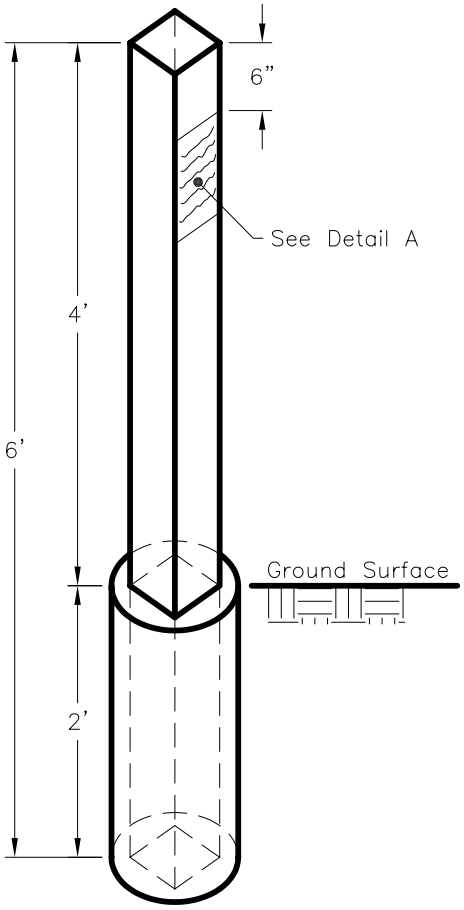
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Pipe Marker



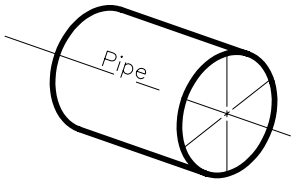
DETAIL A



Notes:

1. Posts to be 4"x4" foundation grade Redwood or pressure treated Douglas Fir
2. Posts to be encased in concrete – 8" diameter x 2' deep
3. Posts shall be painted white using 2 coats
4. Use 1/2" block black lettering on both sides of the post in line with the pipe
5. Posts shall state diameter and type of pipe as follows:

   Examples: 1) 8–INCH WATER MAIN 2) 24–INCH WASTE WATER 3) 12–INCH STORM DRAIN



Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

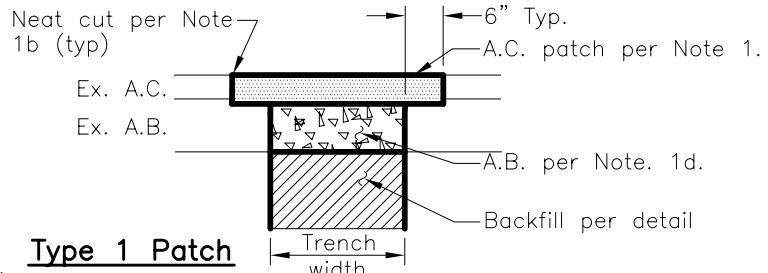
12/28/00
Date

STD PLAN
505

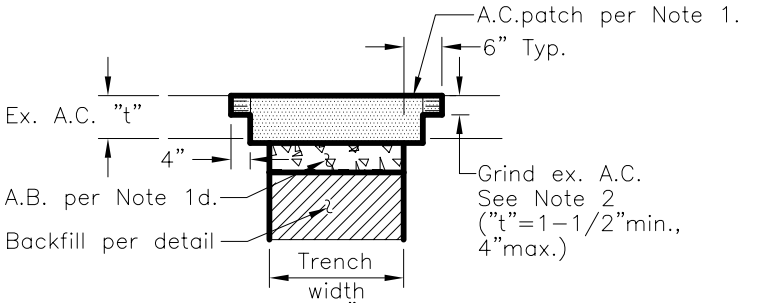
CITY OF LODI

PUBLIC WORKS DEPARTMENT

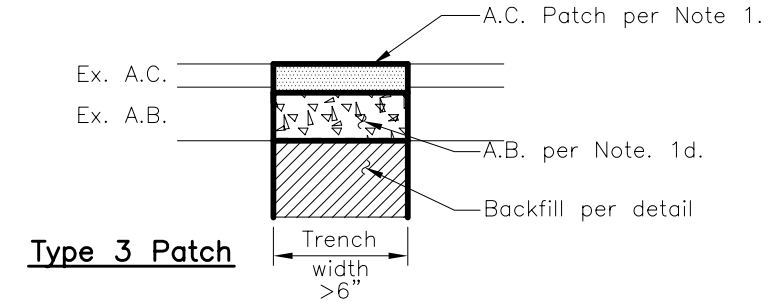
Trench Structural Section Requirements



Type 1 Patch
(Standard, unless Type 2 or 3 is specified)



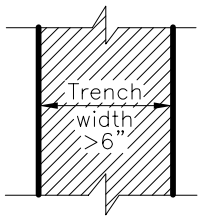
Type 2 Patch



Type 3 Patch

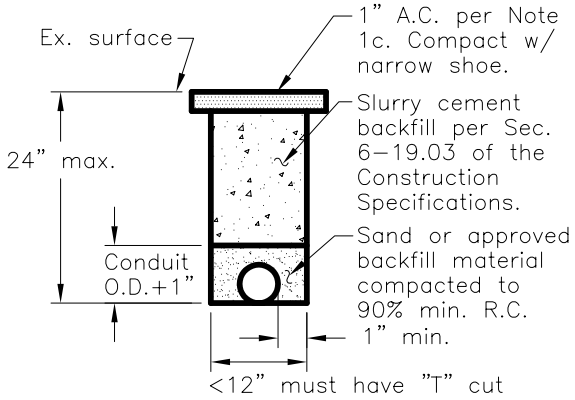
PAVEMENT REPLACEMENT

Backfill:
Native material @ 90% R.C. except approved select material or A.B. Cl. 2 @ 95% required for:
a.) Type 2 patch
b.) Excavation smaller than 3'x3'

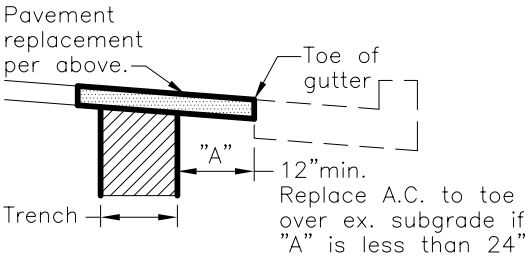


Pipe bedding per Std Plan 501

BACKFILL



3" & Smaller Conduit
(Wheel Cut Trench)



Adjacent to Gutter

SPECIAL CASES

Notes:

1. Type 1 Patch:
   a) Total AC thickness to match existing plus 1", 3" minimum applied in two lifts.
   b) Drop hammer or other rough cut allowed for initial cut along trench wall. Final AC removal per Sec. 6-15.02 "Removal Method" of the Construction Specification.
   c) AC replacement per Sec. 6-39.04 "Trench Replacement and Shoulder Paving" of the Construction Specifications.
   d) AB thickness per Plans. AB may be replaced by additional AC (50% of req'd AB thickness).
2. Type 2 patch optional, except when required by the City. Grind depth "t" shall be adjusted to match existing overlay thickness.
3. Type 3 Patch to be used when shown on the plans or as approved by the Engineer, generally on streets to be overlayed.
4. Controlled density fill (CDF) may be used for backfill with the prior approval of the Engineer.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	REVISED AB PATTERN	
Date 12/00				

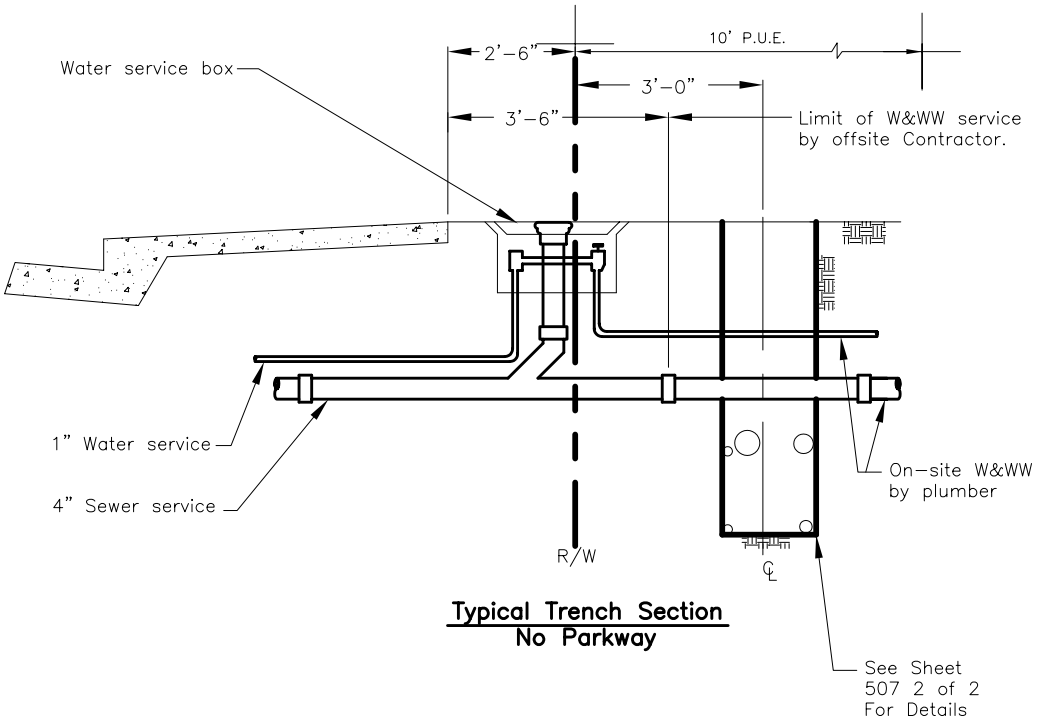
Approved By:
F. Wally Sandelin
City Engineer
R.C.E. 39895
9/25/02
Date

STD PLAN
506

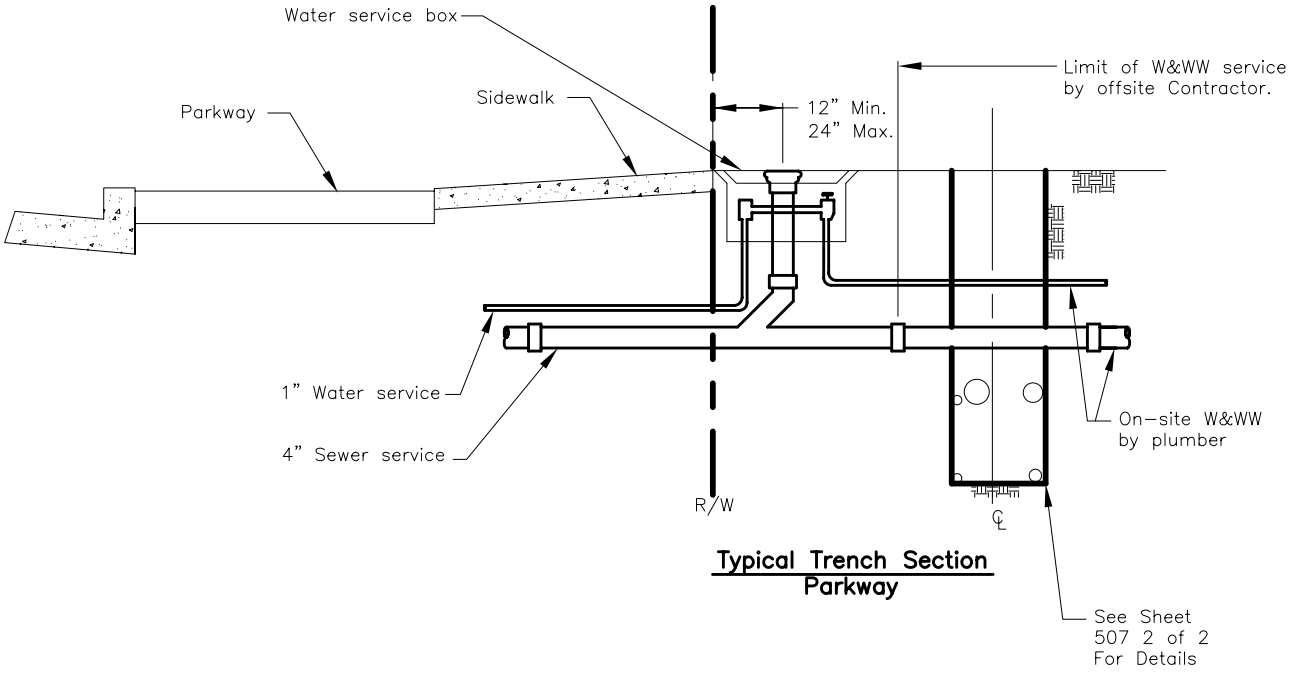
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Joint Trenching Details



Typical Trench Section
No Parkway



Typical Trench Section
Parkway

Note:
1. Also See Std Plans 201, 203, 403, & 414.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED PARKWAY LAYOUT	
Date 12/00				

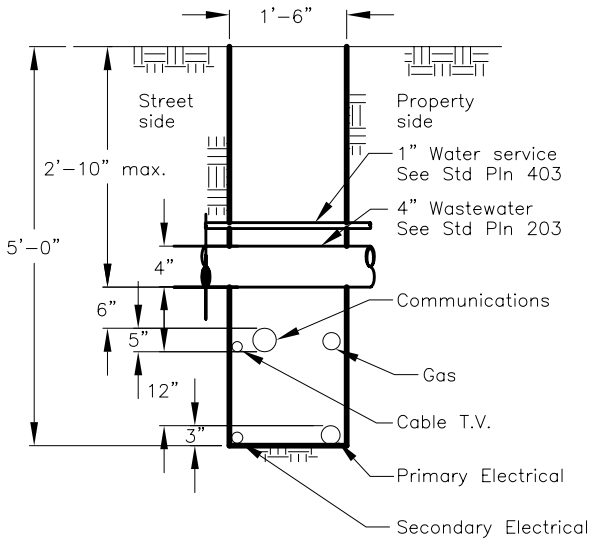
Approved By:
F. Wally Sandelin 9/25/02
F. Wally Sandelin
City Engineer
R.C.E. 39895
Date

STD PLAN
507

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Joint Trenching Details



Trench Section

Electric, telephone, and cable T.V. boxes to be set as determined by each agency in the 10' P.U.E.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	ADDED PARKWAY LAYOUT	
Date 12/00				

Approved By: F. Wally Sandelin 9/25/02

F. Wally Sandelin
City Engineer
R.C.E. 39895

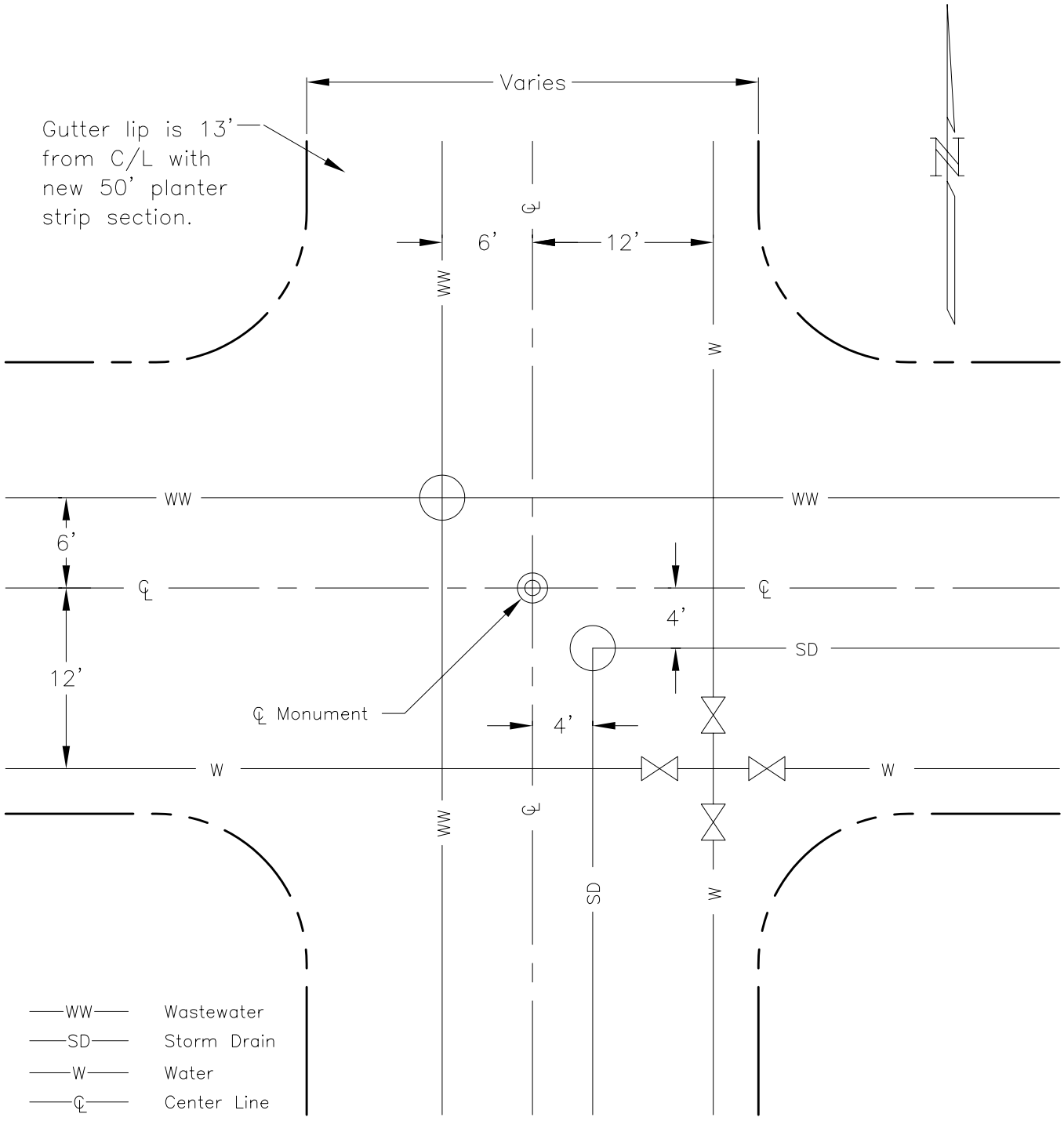
Date

STD PLAN 507

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Standard Utility Locations In Streets

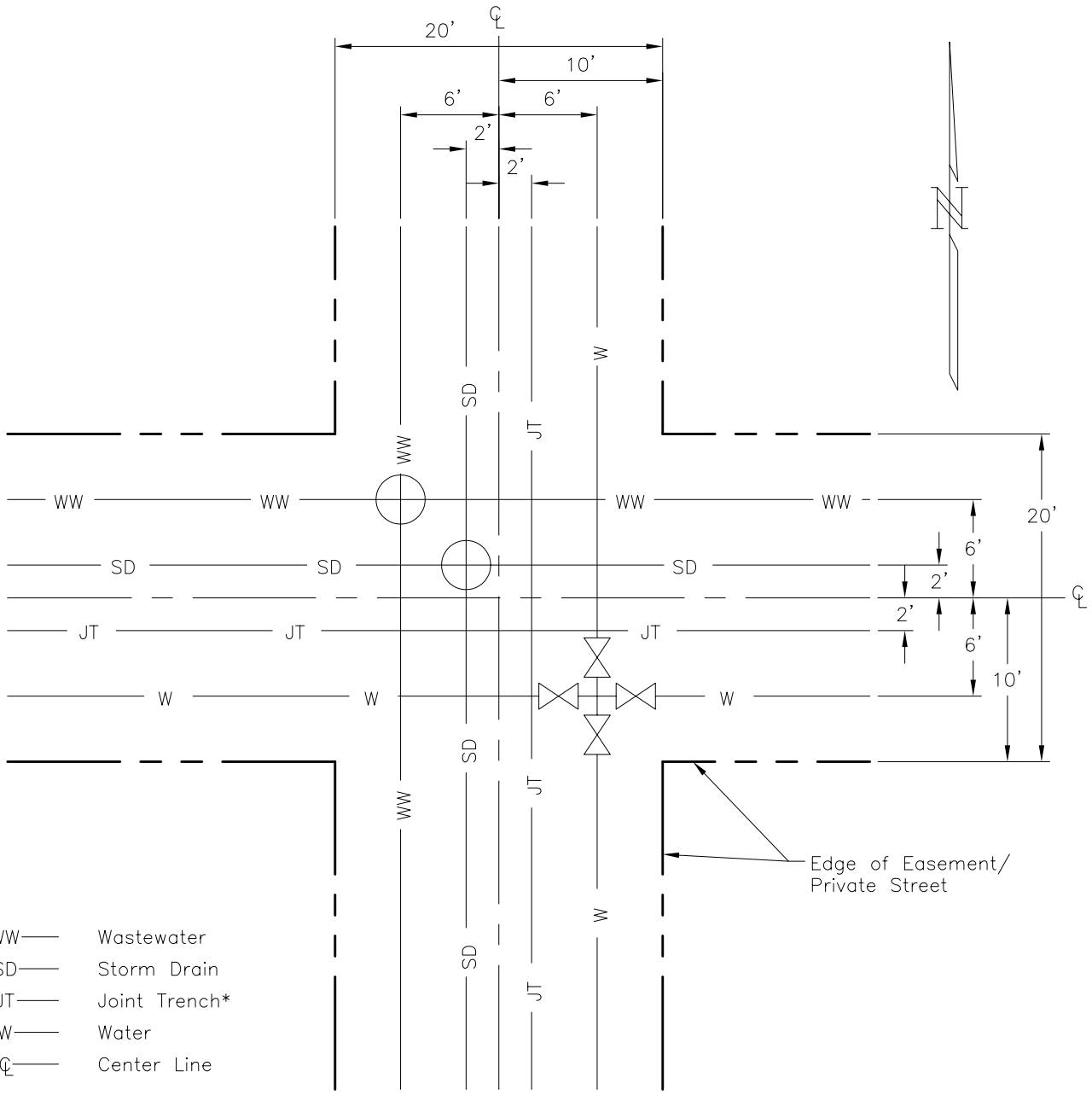


Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	601
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Standard Utility Locations In Easements/ Private Streets



* See Std Plan 507 for Details

Notes:

Private utilities to be located outside of limits shown unless otherwise approved by the Public Works Department.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

12/28/00
Date

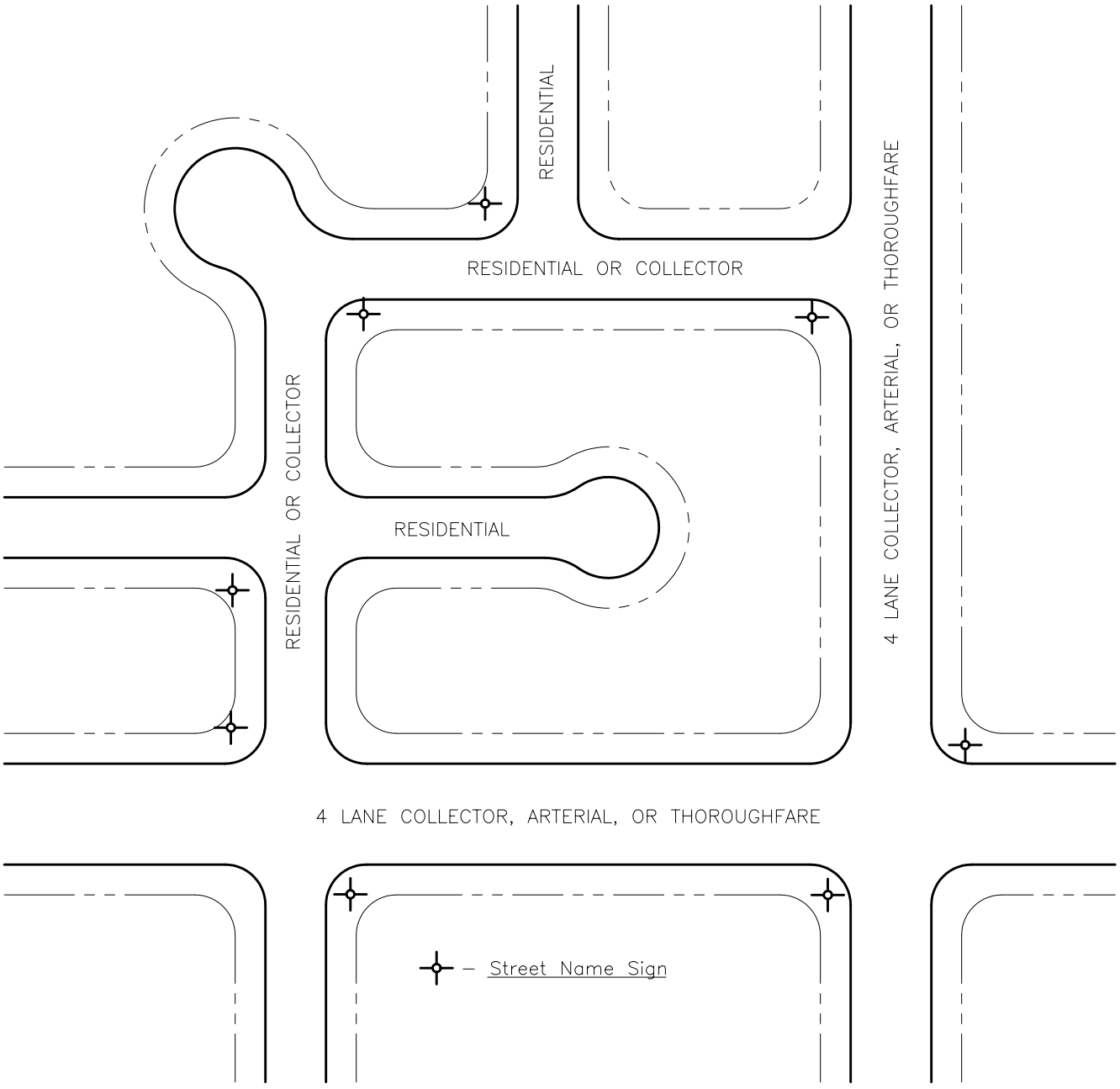
STD PLAN

602

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Street Name Sign Location



- Place one (1) street sign at the intersection of two RESIDENTIALS.
- Place two (2) street signs at the intersection of a RESIDENTIAL or COLLECTOR with a 4 LANE COLLECTOR, ARTERIAL, or THOROUGHFARE.
- Place two (2) street signs at the intersection of any two 4 LANE COLLECTORS, ARTERIALS, or THOROUGHFARES or any combination thereof.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

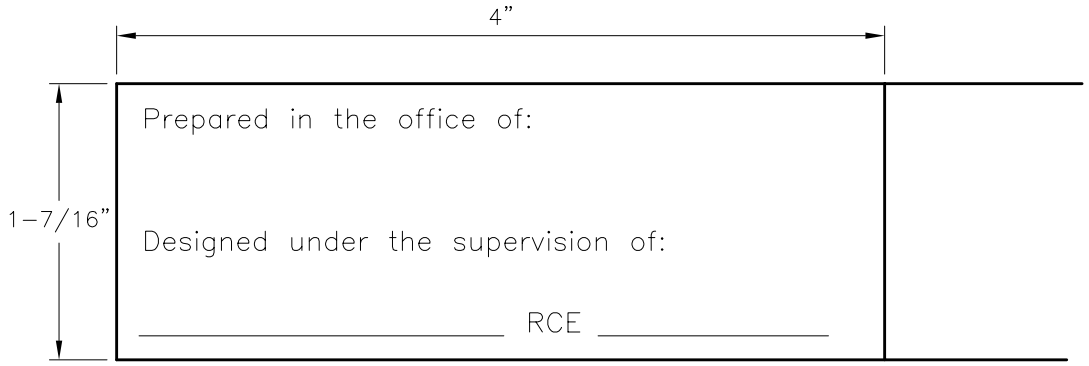
12/28/00
Date

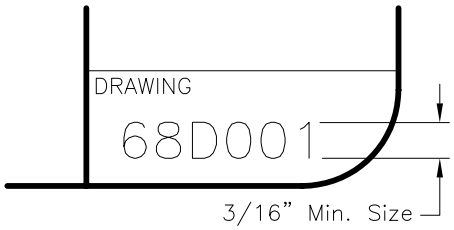
STD PLAN
603

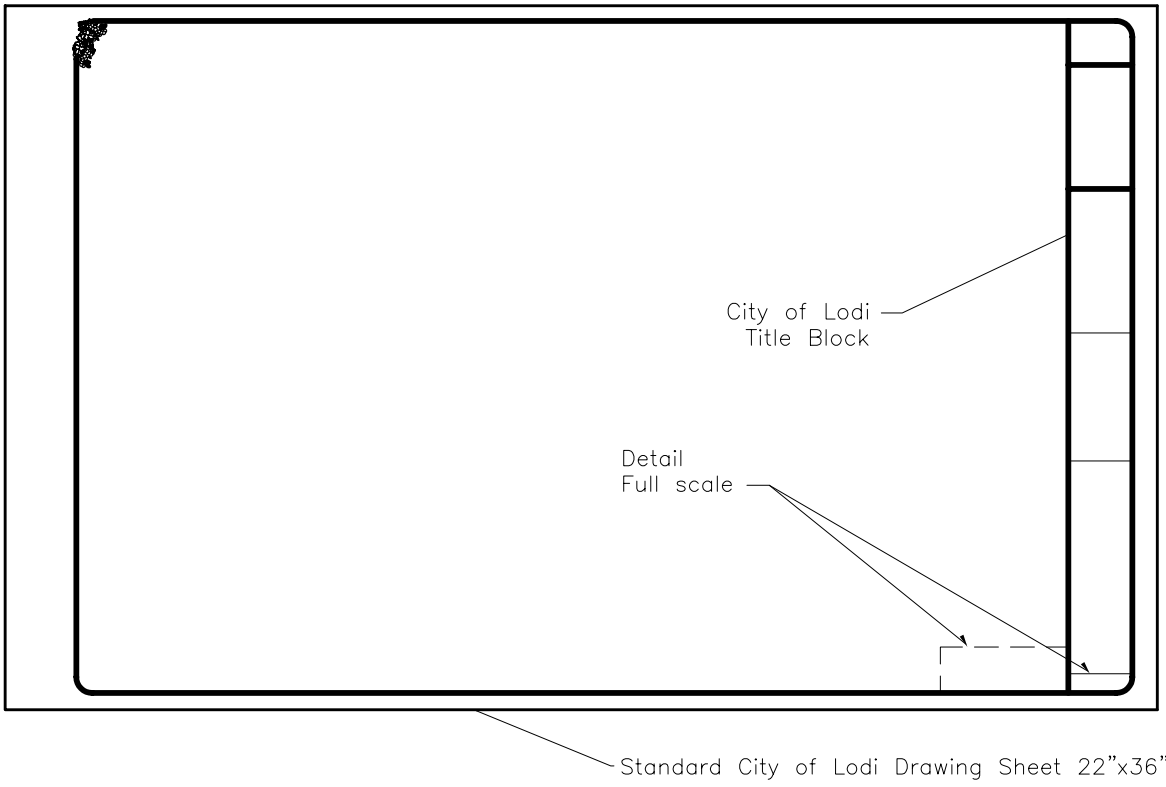
CITY OF LODI

PUBLIC WORKS DEPARTMENT

Title Block For Private Engineers







Notes:

The City of Lodi Public Works Department will furnish title blocks in an autocad format upon request.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	NEW TITLE BLOCK	
Date 12/00				

Approved By: F. Wally Sandelin, City Engineer, R.C.E. 39895 — 9/25/02 Date

STD PLAN 604

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Map Statements

(PARCEL MAPS)
ENGINEER'S/SURVEYOR'S STATEMENT

This map was prepared by me or under my direction and is based upon a field survey in conformance with the requirements of the Subdivision Map Act and Local ordinance at the request of _____ in _____ . I hereby state that this parcel map substantially conforms to the approved or conditionally approved tentative map, if any. All monuments are of the character and occupy the positions indicated and are sufficient to enable the survey to be retraced.

Dated this _____ day of _____ 20__

_____

(Engineer) (Surveyor) (License No.)

(Registration) (License) expiration date: _____

(PARCEL MAPS)
PUBLIC WORKS DIRECTOR'S STATEMENT

This map conforms with the requirements of the Subdivision Map Act and local ordinance. Pursuant to the authority of Ordinance No. 1302 of the City of Lodi, I accept on behalf of the public for public use the offer of dedication of [all Public Utility easements] [sight–obstruction easement] [landscape easement] [all street rights–of–way] [the (width)–foot widening of right–of–way along Street name] [relinquishment to the City of Lodi all access rights of (Parcel Numbers) to and from (Street name)*(except at the approved access openings)*] all as shown on this Parcel Map.

Dated this _____ day of _____ 20__.

_____

Richard C. Prima, Jr., R.C.E. 28183
Public Works Director [Ex Officio City Clerk
of the City of Lodi]

(PARCEL MAP)
OWNER'S STATEMENT

We, the undersigned, hereby state that we are all the parties having record title interest in the lands subdivided and shown on this Final Map of "Tract No. _____, Subdivisions of San Joaquin County, (Name of Subdivision)", City of Lodi, California, and we hereby consent to the preparation and filing of this Final Map in the office of the County Recorder of San Joaquin County, California.

We also offer for dedication to the public for public use [all Public Utility easements] [all street rights–of–way] [the (width)–foot widening of right–of–way along (Street Name)] [to the City of Lodi lot (No.) [relinquish to the City of Lodi all access rights of (Parcel Numbers) to and from (Street Name) *(except at the approved access openings)*] all as shown on this Parcel Map.

Dated this _____ day of _____ 20__.

_____ _____

(Print Name/Title) (Print Name/Title)

Use only if applicable

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	FULL STATEMENT REVIEW	
Date 12/00				

Approved By: F. Wally Sandelin 9/25/02
F. Wally Sandelin
City Engineer
R.C.E. 39895
Date

STD PLAN 605

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Map Statements

(FINAL MAP, PARCEL MAP, RECORD OF SURVEY)
RECORDER'S STATEMENT

Filed this _____ day of _____, 20__, at ___ _.M. in (Book, Volume) _____ of (Maps & Plats, Parcel Map, Record of Survey) at page _____, at the request of _____.

Fee: $ _____

_____ By: _____

Assessor
County Recorder/County Clerk

Assistant/Deputy Recorder

"ALL PURPOSE" ACKNOWLEDGMENT CERTIFICATE

STATE OF CALIFORNIA
COUNTY OF _____

On _____, before me, _____(Print Name)_____, Notary Public, personally appeared _____ and _____, [personally known to me] [proved to me on the basis of satisfactory evidence] to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged to me that he/they executed the same in their authorized capacities, and that by their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand:

_____

Notary Public in and for the
Above-Mentioned State and County

My commission expires: _____

(FINAL MAP)
OWNER'S STATEMENT

We, the undersigned, hereby state that we are all the parties having record title interest in the lands subdivided and shown on this Final Map of "Tract No. _____, Subdivisions of San Joaquin County, (Name of Subdivision)", City of Lodi, California, and we hereby consent to the preparation and filing of this Final Map in the office of the County Recorder of San Joaquin County, California.

We also offer for dedication to the public for public use [all Public Utility easements] [all street rights-of-way] [the (width)-foot widening of right-of-way along (Street Name)] [to the City of Lodi lot (No.) [relinquish to the City of Lodi all access rights of (Parcel Numbers) to and from (Street Name) *(except at the approved access openings)*] all as shown on this Final Map.

Dated this _____ day of _____ 20__.

_____ _____

(Print Name/Title) (Print Name/Title)

Use only if applicable

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	FULL STATEMENT REVIEW	
Date 12/00				

Approved By: F. Wally Sandelin 9/25/02
F. Wally Sandelin
City Engineer
R.C.E. 39895
Date

STD PLAN 605

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Map Statements

(FINAL MAP)
[ENGINEER'S] [SURVEYOR'S] STATEMENT

I, _____, a (Registered Civil Engineer) (Licensed Land Surveyor) in the State of California, hereby state that I, or someone under my direction, have surveyed the land for and prepared this Final Map of "Tract. No. _____, Subdivisions of San Joaquin County, (Name of Subdivision)", City of Lodi, California, that said survey was made in (Month/Year), and that same is true and complete as shown. I further state that all the monuments shown hereon will be of the character and occupy the positions indicated before said subdivision improvements are accepted by the City of Lodi, and that said monuments will be sufficient to enable this survey to be retraced.

Dated this _____ day of _____ 20__.

_____

[Engineer] [Surveyor] (License No.)

[Registration] [License] expiration date: _____

(FINAL MAPS)
PUBLIC WORKS DIRECTOR'S STATEMENT

I, Richard C. Prima, Jr., hereby state that I am the Public Works Director of the City of Lodi, California and that I have examined this Final Map of "Tract No. _____, Subdivisions of San Joaquin County, (Name of Subdivision)", City of Lodi, California and that the subdivision shown hereon is substantially the same as it appeared on the tentative map, and any approved alternations thereof. I further state that this Final Map complies with all the provisions of Title 16 of the Lodi Municipal Code, and any amendments thereto, applicable at the time of approval of the tentative map.

Dated this _____ day of _____ 20__.

_____

Richard C. Prima, Jr., R.C.E. 28183
Public Works Director
Registration expiration date: _____

(FINAL MAPS)
CITY CLERK'S STATEMENT

This is to state that at its regularly held meeting on the _____ day of _____, 20__, the City Council of the City of Lodi, California approved this Final Map of "Tract No. _____, Subdivisions of San Joaquin County, (Name of Subdivision)", City of Lodi, California, and accepted on behalf of the public for public use the offer of dedication of [all Public Utility Easements] [sight obstruction easement] [landscape easement] [accepted on behalf of the City the relinquishment to the City of Lodi all access rights of (Lot Numbers) to and from (Street Name) * (except at the approved access openings)*] all as shown on this Final Map and accepted the offer of dedication of [all street rights-of-way] [the (width)-foot widening of right-of-way along Street name][Lot (No.)] to the City of Lodi subject to satisfactory completion of improvements thereon of said street rights-of-way [and lot (No.) in accordance with Title 16 of the Lodi Municipal Code, and any amendments thereto, applicable at the time of approval of the tentative map.

Dated this _____ day of _____ 20__.

_____

Susan J. Blackston (City Clerk)
City Clerk and Clerk of the City Council

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	FULL STATEMENT REVIEW	
Date 12/00				

Approved By: F. Wally Sandelin 9/25/02
F. Wally Sandelin
City Engineer
R.C.E. 39895
Date

STD PLAN 605

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Map Statements

* Notes (Use where applicable)

1. Refer to tentative map application No. _____

2. Requirements of the Lodi Municipal Code for the dedication of rights–of–way, easements, abandonment of underground tanks and wells, payment of fees and installation of off–site street improvements and utilities have not been met at this time and must be met prior to development or issuance of a building permit of when requested by the City (on Parcels _____).

3. The P.U.E. dedication to the City of Lodi gives the City, owners of public utilities, and owners of cable TV franchises the right to access, construct, maintain, inspect, repair, replace, remove, and operate their facilities in the P.U.E.'S. No buildings or structures shall be constructed nor shall anything be planted within the easement which would interfere with the use or operation of public utilities in the easement.

4. The sight obstruction easement grants the City of Lodi the right to maintain, repair, replace or remove obstructions, both publicly and privately owned, together with the right of access necessary for the maintaining, repairing, replacing or removing said obstructions, in, over, under and across said easement. No buildings or structures shall be constructed and no shrubbery, plantings, mounds or other obstructions over 30 inches high shall be placed within said easement which would interfere with the line of sight at the adjacent intersection. Any poles or trees shall be spaced far enough apart to provide adequate sight and tree limbs shall be at least 7 feet above the ground.

5. Lot _____ except areas covered by buildings or structures shown on the approved building permit plans and subsequent revisions thereto is hereby offered as a public utility easement. "Subsequent revisions" to the plans shall be approved by the affected utilities and any necessary utility relocations will be made at the expense of the developer/owner.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	FULL STATEMENT REVIEW	
Date 12/00				

Approved By:

F. Wally Sandelin 9/25/02

F. Wally Sandelin
City Engineer
R.C.E. 39895

Date

STD PLAN

605

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Map Statements

(FINAL MAPS)

CITY CLERK'S CERTIFICATION OF ABANDONMENT OF PUBLIC (STREET/ALLEY, UTILITY) EASEMENTS

This is to certify that at its regularly held meeting on the _____ day of _____, 20__, the City Council of the City of Lodi, California, by its approval of this final map of "Tract No. _____, Subdivisions of San Joaquin County, (Subdivision Name), did abandon each and every (Street Right-of-Way/Easement, Public Utility Easement) identified in the (Parcel Map, Final Map, Easement, Deed), filed for record _____, 20__, (Book/Volume Number, Page Number, Instrument Number), San Joaquin County Records.

Dated this _____ day of _____ 20__.

_____

(City Clerk)
City Clerk and Clerk of the City Council
of the City of Lodi, California

(FINAL MAP)

***CERTIFICATE OF DEDICATION**

(Do not combine with Owner's Statement)

The following real property is dedicated by (name and address of subdivider dedicating the property), for purpose of (name public improvement or construction of public facility):

(Legal Description)

The City of Lodi shall reconvey the property to the subdivider if the City of Lodi makes a determination pursuant to Government Code Section 66477.5 that the same public purpose for which the property was dedicated does not exist, or the property or any portion thereof, is not needed for public utilities.

*Applies only to dedication in fee (See Section 66477.5). Use only if applicable.

PUBLIC WORKS DIRECTOR'S CERTIFICATION

Abandonment only

Abandonment of (Street Right-of-Way/Easement/Public Utility Easement)

This map conforms with the requirements of the Subdivision Map Act and local ordinance. I certify that a (street/alley right-of-way easement public utility easement) accepted by record information as filed on _____ 20__, [(Instrument No. ____, Map(Book/Volume Number, Page Number)] Official Records San Joaquin County, is abandoned by the recordation of this parcel map.

Dated this _____ day of _____ 20__.

_____

Richard C. Prima, Jr., R.C.E. 28183
Public Works Director Ex-Officio City Clerk
of the City of Lodi

RECORD OF SURVEY

(Lot Line Adjustments)

STATEMENT OF PURPOSE

The purpose of this survey is to establish and monument the adjusted property line(s) as described in Certificate of Lot Line Adjustment, (File No.) recorded on _____ as Instrument No. ____, San Joaquin County Records, and to conform with Section 8762 of the Land Surveyor's Act.

(Lot Line Adjustments-Merged lots)

STATEMENT OF PURPOSE

The purpose of this survey is to depict the merged Lots as described in Certificate of Lot Line Adjustment (File No) recorded on _____ as Instrument No. ____, San Joaquin County Records and to conform with Section 8762 of the Land Surveyor's Act.

Dr. KT	No.	Date	Revision	Appr.
Ch. WS	1	9/25	FULL STATEMENT REVIEW	
Date 12/00				

Approved By: F. Wally Sandelin 9/25/02
F. Wally Sandelin
City Engineer
R.C.E. 39895
Date

STD PLAN 605

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Rainfall Intensity

Tc = Time of Concentration in minutes (See Design Stds §3.200)
I = Rainfall Intensity in inches per hour, 2±yr storm
I = 5.51*(Tc)^(−0.63)

Tc	I	Tc	I	Tc	I	Tc	I
10	1.29	40	0.54	90	0.32	240	0.17
11	1.22	41	0.53	95	0.31	245	0.17
12	1.15	42	0.52	100	0.30	250	0.17
13	1.09	43	0.52	105	0.29	255	0.17
14	1.04	44	0.51	110	0.29	260	0.17
15	1.00	45	0.50	115	0.28	265	0.16
16	0.96	46	0.49	120	0.27	270	0.16
17	0.92	47	0.49	125	0.26	275	0.16
18	0.89	48	0.48	130	0.26	280	0.16
19	0.86	49	0.47	135	0.25	285	0.16
20	0.83	50	0.47	140	0.24	290	0.15
21	0.81	51	0.46	145	0.24	295	0.15
22	0.79	52	0.46	150	0.23	300	0.15
23	0.76	53	0.45	155	0.23	305	0.15
24	0.74	54	0.45	160	0.23	310	0.15
25	0.73	55	0.44	165	0.22	315	0.15
26	0.71	56	0.44	170	0.22	320	0.15
27	0.69	57	0.43	175	0.21	325	0.14
28	0.68	58	0.43	180	0.21	330	0.14
29	0.66	59	0.42	185	0.21	335	0.14
30	0.65	60	0.42	190	0.20	340	0.14
31	0.63	61	0.41	195	0.20	345	0.14
32	0.62	62	0.41	200	0.20	350	0.14
33	0.61	63	0.41	205	0.19	355	0.14
34	0.60	64	0.40	210	0.19	360	0.14
35	0.59	65	0.40	215	0.19	365	0.13
36	0.58	70	0.38	220	0.18	370	0.13
37	0.57	75	0.36	225	0.18	375	0.13
38	0.56	80	0.35	230	0.18	380	0.13
39	0.55	85	0.34	235	0.18	385	0.13

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	606
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Gutter Hydraulic Capacities

Assumptions:

Street Cross Slope = 2½%
Manning's "n" = .015
Pavement hike-up at toe of curb = 3/8"

DRIVEWAY-TYPE CURB & GUTTER

Street Flooding

Depth (ft)	Area (SF)	from top of curb (ft.)	Q*/(s)1/2
0.20	0.2	2.1	5.1
0.21	0.3	2.6	5.2
0.22	0.3	3.0	5.6
0.23	0.3	3.5	6.1
0.24	0.3	3.9	6.8
0.25	0.4	4.4	7.7
0.26	0.4	4.8	8.6
0.27	0.5	5.3	9.8
0.28	0.5	5.7	11.1
0.29	0.6	6.2	12.5
0.30	0.7	6.6	14.2
0.31	0.7	7.1	15.9
0.32	0.8	7.5	17.9
0.33	0.9	8.0	20.1
0.34	1.0	8.4	22.4
0.35	1.0	8.9	25.0
0.36	1.1	9.3	27.8
0.37	1.2	9.8	31.0
0.38	1.3	10.2	34.2
0.39	1.4	10.7	37.5
0.40	1.6	11.1	41.2
0.41	1.7	11.6	45.0
0.42	1.8	12.0	49.3

FLOW EXCEEDS TOP OF CURB

SQUARE-TYPE CURB & GUTTER

Street Flooding

Depth (ft)	Area (SF)	from top of curb (ft.)	Q*/(s)1/2
0.20	0.2	3.3	3.6
0.21	0.3	3.7	4.2
0.22	0.3	4.1	5.0
0.23	0.3	4.5	5.8
0.24	0.4	4.9	6.8
0.25	0.4	5.3	8.0
0.26	0.5	5.7	9.3
0.27	0.6	6.1	10.7
0.28	0.6	6.5	12.2
0.29	07	6.9	14.0
0.30	0.8	7.3	15.9
0.31	0.8	7.7	17.9
0.32	0.9	8.1	20.2
0.33	1.0	8.5	22.7
0.34	1.1	8.9	25.3
0.35	1.2	9.3	28.1
0.36	1.3	9.7	31.1
0.37	1.4	10.1	34.4
0.38	1.5	10.5	37.8
0.39	1.6	10.9	41.5
0.40	1.7	11.3	45.4
0.41	1.8	11.7	49.6
0.42	1.9	12.1	54.0
0.43	2.0	12.5	58.6
0.44	2.2	12.9	63.5
0.45	2.3	13.3	68.6
0.46	2.4	13.7	73.9
0.47	2.6	14.1	79.6
0.48	2.7	14.5	85.4
0.49	2.9	14.9	91.8
0.50	3.0	15.3	98.2

FLOW EXCEEDS TOP OF CURB

*Q-Flow in cfs
s-Slope in curb and gutter

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	608
Date 12/00					City Engineer Date R.C.E. 39895	

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Sanitary Sewer Leakage Test

Project _____ First Test Date _____

Test Section _____ Station _____ MH to _____ MH

Contractor _____ Inspector _____

HYDROSTATIC TEST

Allowable leakage shall not exceed 0.6 gallons per hour per inch diameter per 100 feet of pipe.

TAPS: Lot #___, ___, ___, ___, ___, ___, ___.

TAPS: Length#___, ___, ___, ___, ___, ___, ___.= ___.

Water level at start of test _____

Pipe Size	Factor (gph/ft)		Length LF		Allowable loss in gallons
4"	0.024	x	_____	=	____.____
6"	0.024	x	_____	=	____.____
8"	0.024	x	_____	=	____.____
10"	0.024	x	_____	=	____.____
12"	0.024	x	_____	=	____.____
18"	0.024	x	_____	=	____.____
24"	0.024	x	_____	=	____.____
30"	0.024	x	_____	=	____.____
"	0.024	x	_____	=	____.____
48"MH	0.300	x	___ high	=	____.____

Allowable loss: one hour = ____.____gal.

AIR TEST

Use largest pipe size under pressure and circle below. "Holding Time" represents minimum time for pressure loss from 3.5 psi to 2.5 psi.

Pipe Size		Holding time in minutes
4"	=	2
6"	=	3
8"	=	4
10"	=	5
12"	=	6
18"	=	9
24"	=	11
30"	=	14

Date	Time	Gallon Loss: Actual/Allowable	Air Time: Actual/Required	Pass	Fail	Inspector

All utilities in and compaction completed: yes ___ no ___

Remarks:

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By: F. Wally Sandelin 12/28/00

F. Wally Sandelin
City Engineer
R.C.E. 39895

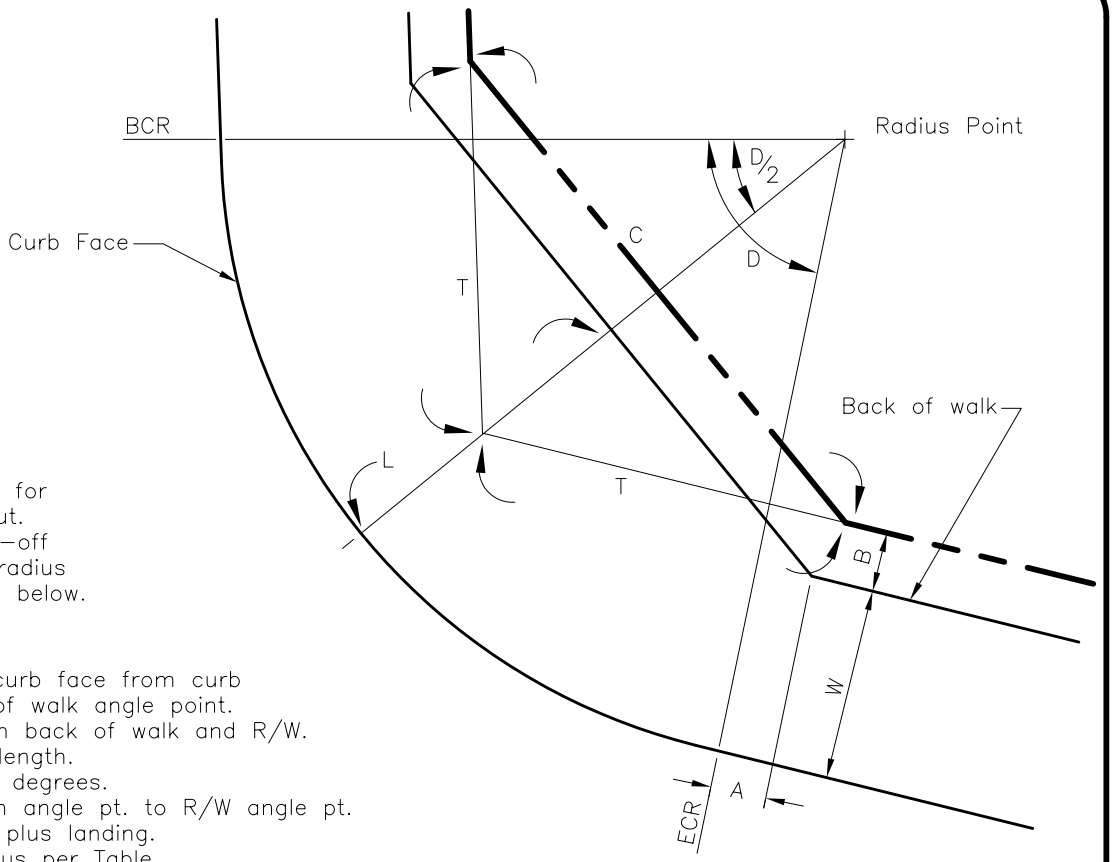
Date

STD PLAN 610

CITY OF LODI

PUBLIC WORKS DEPARTMENT

R/W Corner Cut–off & Curb Return Requirements



NOTES
1. See Std. Plan 612 for curb return layout.
2. Provide corner cut–off for curb return radius required in Table below.

LEGEND
A = Distance along curb face from curb return to back of walk angle point.
B = Distance between back of walk and R/W.
C = Corner cut–off length.
D = Central angle in degrees.
E = B.O.W. dist. from angle pt. to R/W angle pt.
L = Length of ramp plus landing.
R = Curb return radius per Table
T = R/W tangent distance in ft.
W = Distance from face of curb to back of walk in ft.

FORMULAS

$$A = \frac{R-W-[\ (R-L)\ /\ \cos(D/2)\ ]}{\tan(D/2)} \quad \text{or} \quad (R-W)\ /\tan(D/2) - (R-L)\ /\sin(D/2)$$

$C = 2T\cos(D/2)$ $\qquad$ $E = B\tan(D/4)$ $\qquad$ L = 10' for R = 20' & 25'; 12' for R = 30' & 35'

$$T = (R-W-B)\tan(D/2) + \frac{R-W-B-[\ (R-L-B)\ /\ \cos(D/2)\ ]}{\tan(D/2)}$$

CURB RETURN RADIUS TABLE

Intersection of: Face–Face		Minor Res.	Std. Res.	Minor Collector	Major Collector	Industrial (Local)	Arterial
Minor Res.	34'	20'	–	–	–	–	–
Std. Res.	39'	20'	20'	–	–	–	–
Minor Col.	44'	20'	20'	25'	–	–	–
Major Col.	52'	20'	20'	25'	30'	–	–
Ind. Local	52'	–	–	–	30'	30'	–
Arterial	64'	25'	25'	30'	30'	35'	35'
Other	>64'	* *	S P E C I A L		D E S I G N	* *	

Dr. KT	No.	Date	Revision	Appr.
Ch. WS				
Date 12/00				

Approved By:

F. Wally Sandelin
City Engineer
R.C.E. 39895

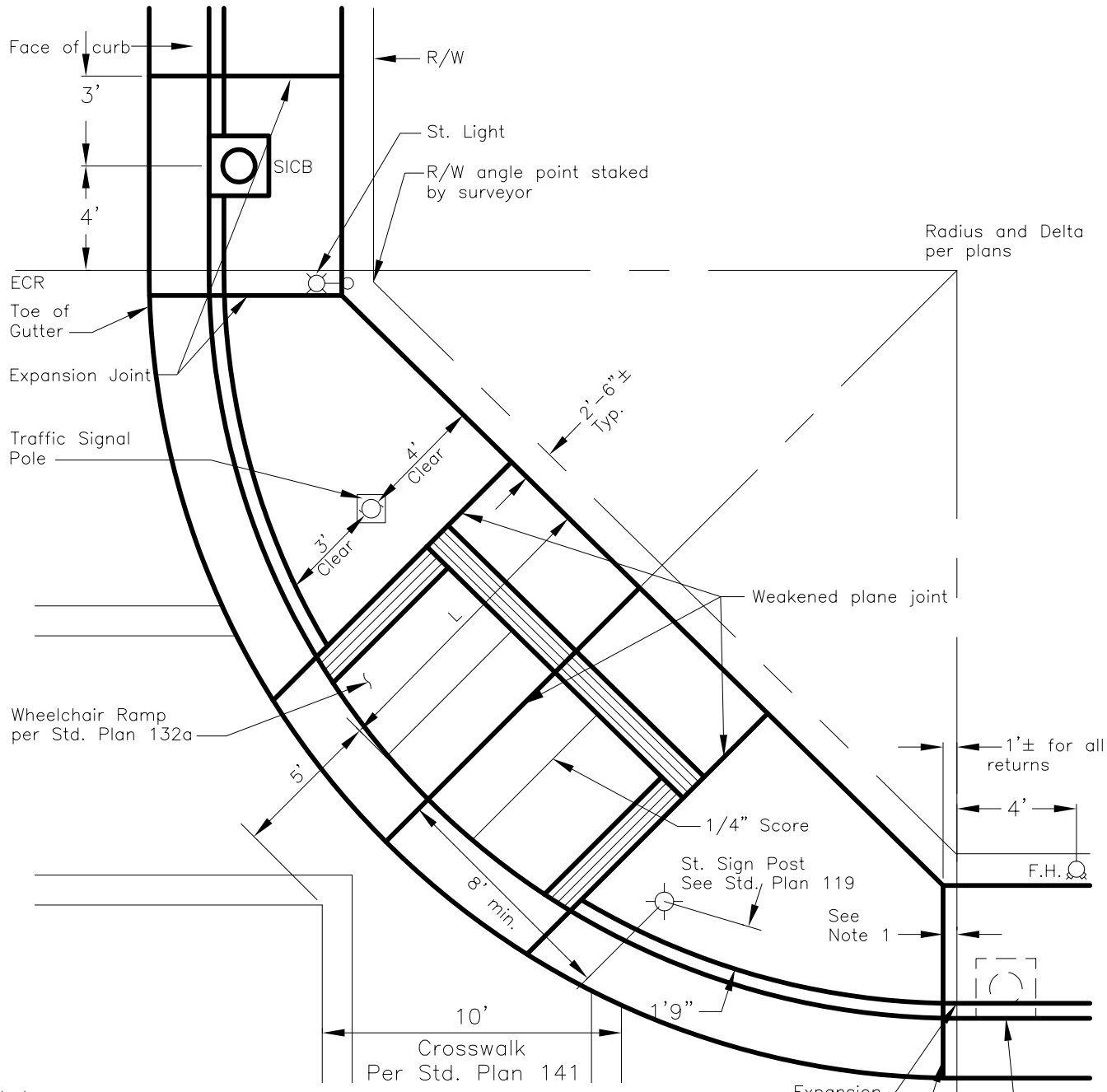
12/28/00
Date

STD PLAN
611

CITY OF LODI

PUBLIC WORKS DEPARTMENT

Curb Return Layout Plan



Notes:

1. Curb return to back of walk angle point distance varies. When actual distance is less than 2', curb return shall be placed at back of walk angle point and curb return curve forced to fit.
2. BCR and ECR station per plans (nominal, see note 1)
3. L=10' for R=20' and 25'; 12' for R=30' and 35'

Dr. KT	No.	Date	Revision	Appr.	Approved By:	STD PLAN
Ch. WS					F. Wally Sandelin 12/28/00	612
Date 12/00					F. Wally Sandelin, City Engineer, R.C.E. 39895 — Date	